ISSUE 193 OCTOBER 2009

Better Homes and Gardens®

WOOD®

25th ANNIVERSARY SPECIAL COLLECTOR'S EDITION

The World's Leading Woodworking Resource

Easy and Elegant Drop-front Computer Desk

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Super-simple Veneering

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25 Best Tool Innovations! p.58

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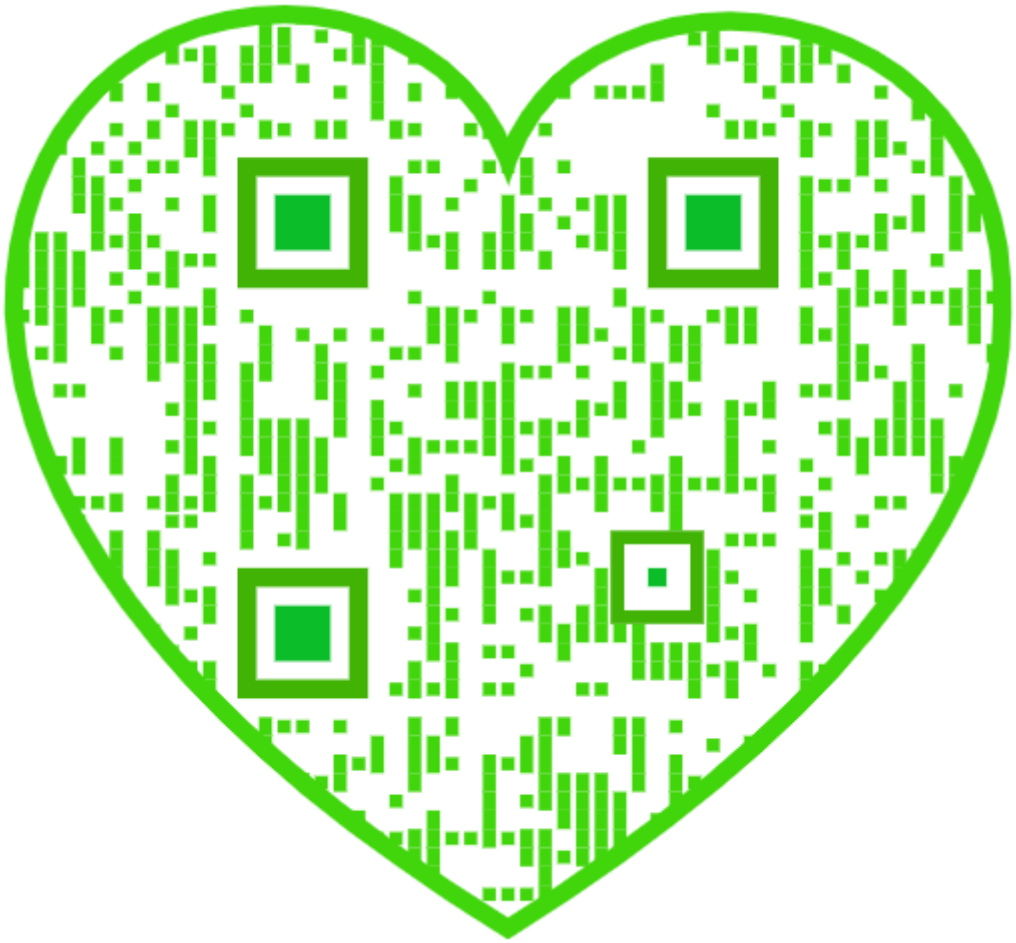

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  G0690 - 603 lbs.
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G0691 SHOWN WITH EXTENSION RAILS & TABLE

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17" Heavy-Duty Extreme Series® Bandsaw *w/ Cast Iron Wheels & Motor Brake*

- Motor: 2 HP, 110V/220V, single-phase, TEFC
- Larger precision ground cast iron table size: 24" x 17"
- Table tilt: 5° left, 45° right
- Max. cutting height: 12"
- 2 blade speeds: 1700 & 3500 FPM
- Double ball bearing blade guides
- Quick change blade release/tensioner
- Approx. shipping weight: 414 lbs.

DELUXE RESAW FENCE & MITER GAUGE INCLUDED

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10" Left-Tilting Contractor Style Table Saw *w/Riving Knife*

- Motor: 2 HP, 110V/220V, single-phase
- Precision ground cast iron table size w/wings attached: 27" x 44"
- Rip capacity: 36" • Lift-off fence
- Capacity: 3¼" @ 90°, 2¼" @ 45°
- Approx. shipping weight: 342 lbs.

MADE IN ISO 9001 FACTORY!

INCLUDES CAST IRON MITER GAUGE

G0661
~~$795.00~~
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2 HP, 10" Hybrid Cabinet Saw

- Motor: 2 HP, 110V/220V, single-phase
- Precision ground cast iron table size w/wings attached: 27" x 39½"
- Arbor: 5/8" • Rip capacity: 30"
- Capacity: 3" @ 90°, 2⅛" @ 45°
- Cast iron miter gauge
- Approx. shipping weight: 439 lbs.

INCLUDES SHOP FOX® ALUMA-CLASSIC™ FENCE

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TOOLS OF THE TRADE

G0478
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10" Left-Tilting Super Heavy-Duty Table Saw

- Motor: 3 HP, 220V, single-phase
- Precision ground cast iron table
- Table size w/wings attached: 27" x 48⅛"
- Max. depth of cut: 3" @ 90°, 2⅛" @ 45°
- Cutting capacity: 8" L, 26" R
- Approx. shipping weight: 465 lbs.

BEST VALUE

INCLUDES SHOP FOX® CLASSIC™ FENCE

G1023SL
3 HP, SINGLE-PHASE
ONLY $1075.00
FREE SHIPPING REG. $89

14" Heavy-Duty Bandsaw

Fine WoodWorking

- Motor: 1½ HP, 110V/220V, single-phase, TEFC, 1725 RPM
- Precision ground cast iron table
- Table size: 20½" x 14"
  - Table tilt: 45° R, 10° L
  - Cutting capacity/throat: 13½"
  - Max. cutting height: 6"
  - Blade size: 92½" to 93½" (⅛" - ¾" W)
  - Cast iron wheels
  - Approx. shipping weight: 262 lbs.

INCLUDES DELUXE ALUMINUM RE-SAW FENCE & WORK LIGHT

EXTREME SERIES

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G0555X ~~$625.00~~
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14" Industrial Resaw Bandsaw

Fine WoodWorking

- Motor: 2 HP, 110V/220V, single-phase, TEFC, 1725 RPM
- Precision ground cast iron table
- Table size: 19¾" x 14³⁄₁₆"
- Table tilt: 45° R, 8° L
- Cutting capacity/throat: 13½"
- Max. cutting height: 10"
- Blade size: 106" L (⅛" - ¾" W)
  - Blade speed: 3000 FPM
  - 6" re-saw fence
  - Approx. shipping weight: 284 lbs.

INCLUDES BLADE, BALL BEARING BLADE GUIDES & MITER GAUGE

MADE IN ISO 9001 FACTORY!

G0457
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19" Heavy-Duty Extreme Series® Bandsaw

- Motor: 3 HP, 220V, single-phase, TEFC
- Precision ground cast iron table
  - Table size: 26¾" x 19" x 1½"
  - Cutting capacity/throat: 18¼"
  - Max. cutting height: 12"
  - Blade size: 143" L (⅛" - 1¼" wide)
  - 2 Blade speeds: 1700, 3500 FPM
  - Approx. shipping weight: 458 lbs.

INCLUDES ALUMINUM RE-SAW FENCE ATTACHMENT, DUAL BALL BEARING BLADE GUIDES, CAST IRON WHEELS & FENCE

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MADE IN ISO 9001 FACTORY!

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15" Planers

- Motor: 3 HP, 220V, single-phase
- Precision ground cast iron tables & extension wings
- Table size: 15" x 20"
- Max. cutting height: 8"
- Feed rate: 16 & 30 FPM
- Cutterhead speed: 5000 RPM
- Built-in mobile base
- Magnetic safety switch
- Heavy-duty cast iron construction
- Approx. shipping weight: 675 lbs.

4" DUST PORT & BOARD RETURN ROLLERS

FREE SHIPPING REG. $139

G0453
3 Blade Cutterhead ONLY $950.00

G0453Z Z SERIES
Spiral Cutterhead ONLY $1495.00

$139 Shipping ANYWHERE IN LOWER 48 STATES

Spiral Cutterhead

8" Jointer *w/Exclusive Digital Height Readout*

PATENT PENDING DIGITAL READOUT

EXTREME SERIES

MADE IN ISO 9001 FACTORY!

- Motor: 3 HP, 220V, single-phase, TEFC
- Precision ground cast iron tables
- Total table size: 8" x 76⅜"
- Infeed table size: 8" x 43⅜"
- 4 row spiral cutterhead
- Cutterhead speed: 5350 RPM
- Max. rabbeting depth: ½"
- Deluxe cast iron fence size: 35"L x 1¼"W x 5"H
- Approx. shipping weight: 597 lbs.

INCLUDES FREE SAFETY PUSH BLOCKS

EXTRA LONG INFEED TABLE & EXTRA TALL FENCE WITH RACK & PINION ADJUSTMENT

FREE SHIPPING REG. $139

G0495X ONLY $1795.00

13" Planer *w/Dust Collection*

- Motor: 2 HP, 110V, single-phase
- Max. cutting width: 13"
- Max. cutting height: 6"
- Max. cutting depth: 1/16"
- Cutterhead speed: 8000 RPM
- Feed rate: 19 FPM
- Knives: 2 double-edged HSS
- Approx. shipping weight: 95 lbs.

New!

INCLUDES 2½" DUST PORT & COLLECTION BAG, SIDE HANDLES & FLIP UP WINGS FOR PORTABILITY!

G0689
INTRODUCTORY PRICE $375.00

$39 Shipping ANYWHERE IN LOWER 48 STATES

6" Parallelogram Jointers

- Motor: 1½ HP, 110V/220V, single-phase
- Precision ground cast iron tables size: 6" x 55½"
- Rabbeting capacity: ½" • Max. depth of cut: ⅛"
- Cutterhead speed: 4850 RPM
- Parallelogram table adjustment
- Center mounted fence
- Built-in mobile base
- Approx. shipping weight: 362 lbs.

FREE SHIPPING REG. $89

INCLUDES FREE SAFETY PUSH BLOCKS

G0604X
4 KNIFE CUTTERHEAD
ONLY $650.00

G0604ZX
SPIRAL CUTTERHEAD
ONLY $895.00

8" Jointers *w/Built-in Mobile Base*

- Motor: 3 HP, 220V, single-phase, TEFC, 3450 RPM
- Precision ground cast iron tables size: 9" x 72½"
- Rabbeting capacity: ½" • Max. depth of cut: ⅛"
- Cutterhead speed: 5000 RPM
- Deluxe cast iron fence size: 35" L x 5" H
- Built-in mobile base
- Approx. shipping weight: 552 lbs.

INCLUDES FREE SAFETY PUSH BLOCKS

G0656 ~~$795.00~~
SALE $750.00

G0656X
ONLY $1095.00

$139 Shipping ANYWHERE IN LOWER 48 STATES

12" Baby Drum Sander

- Sanding motor: 1½ HP, 110V, single-phase
- Conveyor motor: 1/10 HP, 110V, single-phase, variable speed 0-15 FPM
- Drum surface speed: 2300 FPM
- Max. stock dimensions: 12" wide x 3½" thick
- Min. stock length: 8"
- Sanding drum size: 4"
- Sanding belt: 3" hook & loop
- Approx. shipping weight: 160 lbs.

SIDE HANDLES FOR PORTABILITY!

2 ADJUSTABLE PRESSURE ROLLERS & INDUSTRIAL-DUTY BELT

FREE SHIPPING REG. $69

G0459
ONLY $575.00

3 HP Shaper

- Motor: 3 HP, 220V, single-phase w/reversing switch
- Precision ground cast iron table
- Table w/standard wing attached: 30½" x 20¼"
- 3 interchangeable spindles: ½", ¾" & 1"
- Spindle travel: 3"
- Spindle speeds: 7000 & 10,000 RPM
- Spindle openings on table: 1⅜", 2¾", 4" & 5½"
- Approx. shipping weight: 357 lbs.

INCLUDES MAGNETIC POWER SWITCH, MITER GAUGE & FENCE WITH HOLD-DOWN SPRINGS

FREE SHIPPING REG. $89

G1026 ~~$975.00~~
ONLY $925.00

1½ HP Cyclone Dust Collector

- Motor: 1½ HP, 110V/220V, single-phase, TEFC Class "F", 60 Hertz/3450 RPM
- Intake hole size: 6"
- Impeller: 12½" steel
- Suction capacity: 1025 CFM @ 2.6 SP
- Max. static pressure (in. of water): 10.3"
- Filter: .02-2 microns (99% efficiency)
- Filter surface area: 96 sq. ft.
- Collection drum: 35 gal. steel
- Approx. shipping weight: 313 lbs.

FREE SHIPPING REG. $69

G0443 ONLY $895.00

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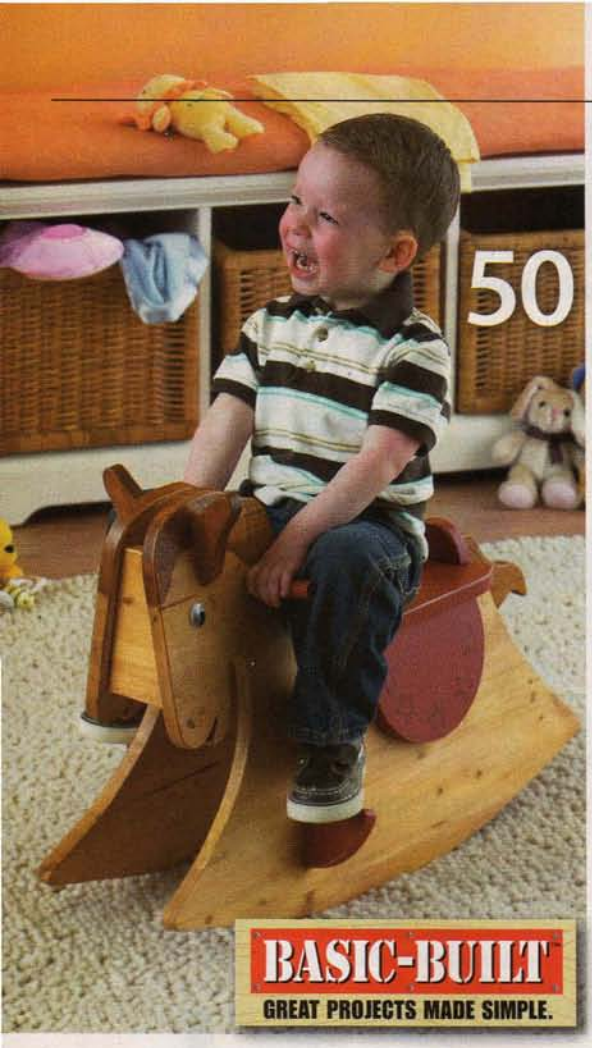

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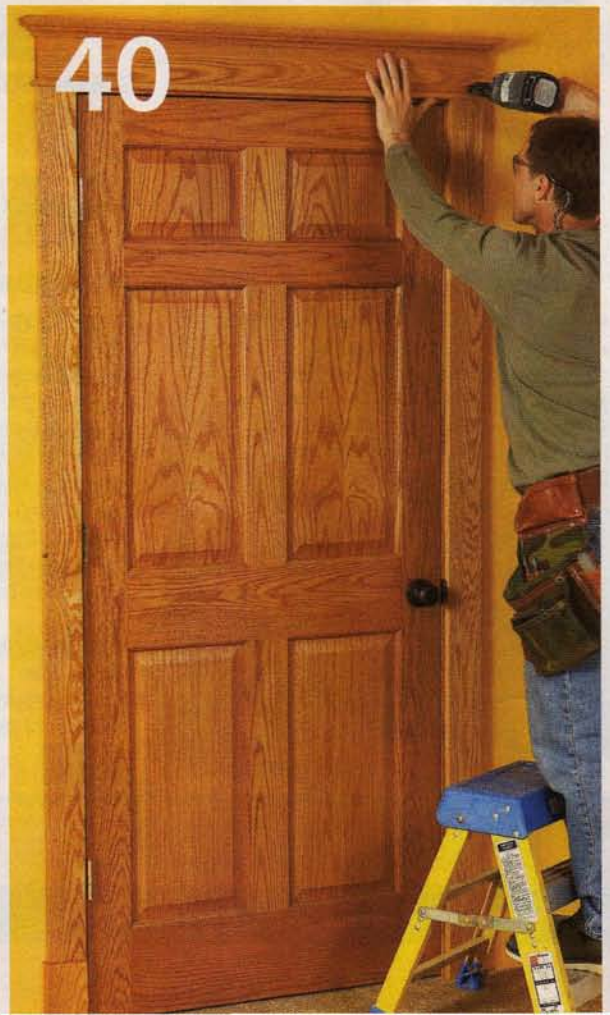

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This seal is your assurance that we build every project, verify every fact, and test every reviewed tool in our workshop to guarantee your success and complete satisfaction.

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woodmagazine.com

25 FACTS ABOUT 10 EDITORS

To honor the 25th anniversary of *WOOD*® magazine, we asked each of our editors to tell you 25 interesting things about themselves. For example:

- Which editor thinks he may have too many clamps?
- Which was once a daring young man on the flying trapeze?
- Who had to remove a window to deliver a commissioned bed?
- Which editor has never tasted coffee or ketchup?

Find out in the "After Hours with the *WOOD* Gang" blog at woodmagazine.com/afterhours.

YOU POST PHOTOS, EVERYBODY VOTES!

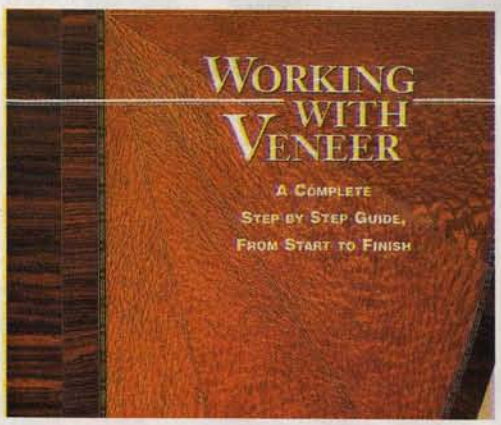
WOOD Magazine's WOODWORKING SHOWDOWN

ONLINE PROJECT CONTEST

It's pure democracy in action: Woodworkers upload photos of their favorite projects, and other woodworkers vote to choose who gets a $1,000+ tool prize in each of six project categories. You could win! Learn more at woodmagazine.com/showdown.

ON VIDEO: MORE ABOUT VENEERING

After trying your hand at Very Easy Veneering on *page 54*, why not take your veneering skills to the next level? Download Darryl Keil's *Working With Veneer* video ($27.95) from the *Better Woodworking* video library at woodmagazine.com/videos.



NEW! GALLERY OF WOODWORKING GREATS

Few woodworkers are household names, but plenty of top-notch woodworkers deserve recognition for their work nevertheless. At woodmagazine.com/wwgreats, you'll get to know some of these unsung heroes of the shop and take a look at their fabulous work, such as this jewelry box from David Selditz.

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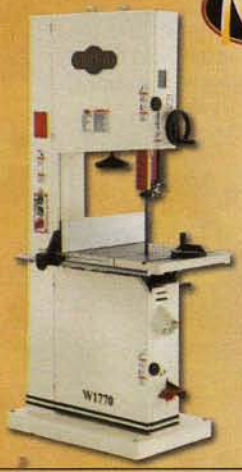

- 5 HP, 220V, single-phase TEFC motor
- Precision ground cast iron table
- Table size: 20¾" W x 29½" L
- Max. cutting height: 14"
- Cutting capacity/throat: 20"
- Blade size: 165" L (¼" - 1⅜" W)
- Blade speed: 4,600 FPM
- Deluxe cast iron fence with extruded aluminum resaw fence attachment

W1770 21" Bandsaw

MADE IN ISO 9001 FACTORY!

10" SLIDING TABLE SAW with Scoring Blade & Riving Knife

New

- 5 HP, 220V, single-phase, TEFC motor
- Table size with extension wings: 40" W x 47" L
- Sliding table size: 12¼" W x 63" L
- Scoring blade dia.: 3⅛"
- Scoring blade arbor speed: 8,000 RPM
- Main blade arbor speed: 4,000 RPM
- Single lever locking fence

W1811 10" Sliding Table Saw

New

18" OPEN END WIDE-BELT SANDER

- 3 HP, 220V, single-phase,1,725 RPM TEFC sanding drum motor
- Variable speed conveyor feed rate
- Sanding drum speed: 1,850 FPM
- Rubber sanding drum dia: 4"
- Pneumatic belt tracking
- Spring belt tensioning system
- 2 steel pressure rollers
- Amp load meter

W1813 18" Wide-Belt Sander

VARIABLE SPEED PLANER/MOULDER with Stand

New

- 2 HP, 220V, single-phase TEFC motor
- Precision ground cast iron table and infeed & outfeed extension wings
- Cutterhead speed: 7,000 RPM
- 2 HSS cutterhead knives
- Number of cuts per minute: 14,000
- Pedestal mounted control switch with variable speed control
- Dovetailed way with precision gib adjustments

W1812 Planer/Moulder

New

SPIRAL CUTTERHEAD PLANERS with Built-in Mobile Base

- 3 HP or 5 HP, 220V, single-phase motor
- Precision ground cast iron table & extension wings
- 2 speed gear box
- 2 adjustable bed rollers
- German-made carbide insert spiral cutterhead
- Pedestal mounted thermal overload magnetic safety switch
- Built-in locking mobile base

W1742S 15" Planer

W1754S 20" Planer

SPIRAL CUTTERHEAD JOINTERS with Parallelogram Adjustable Beds

New

- 110V or 220V, single-phase, TEFC motor
- Precision ground cast iron table
- German-made carbide insert spiral cutterhead
- Quick adjust levers
- Large center mounted cast iron fence
- Pedestal mounted safety switch
- Built-in locking mobile base (W1755S & W1741S)

W1755S 6", 1½ HP Jointer

W1741S 8", 3 HP Jointer

W1744S 12", 3 HP Jointer (does not include the mobile base)

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We asked our staff:
What's the favorite project you built in the past 25 years?

The built-in wall unit in my family room. Designing it involved multiple types of construction details.

The Shaker mantel clock I made for my parents' 50th wedding anniversary.

The flintlock rifle I made from a kit using hand tools. I hand-shaped and finished it to fit the many metal inserts.

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In Memoriam — E.T. Meredith III (1933–2003)

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The 24x30' garage I constructed in 1993. It housed my shop and made possible the projects I later built.

The bar I built of oak and luan plywood, and tempered hardboard. It has a dyed concrete top, and a plywood foot tiled to match the floor.

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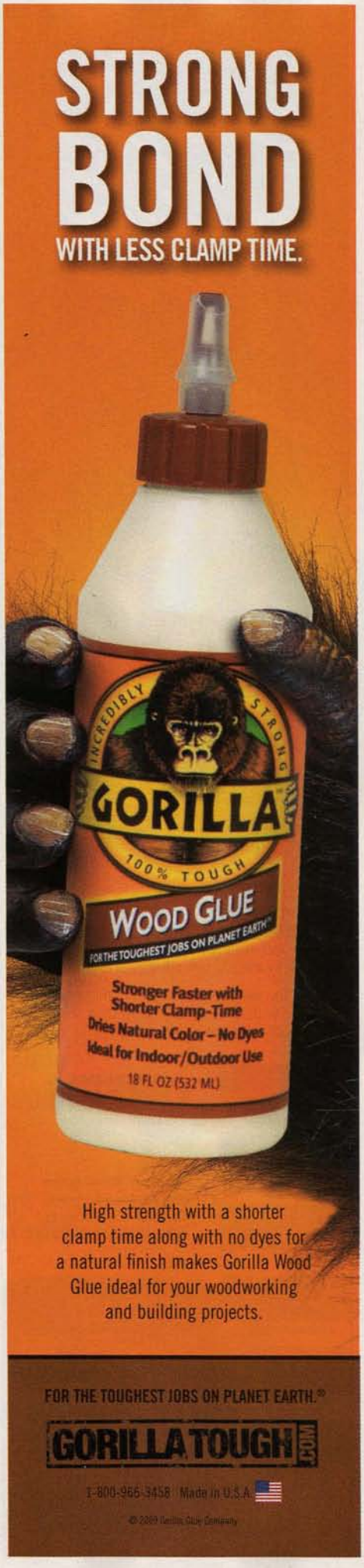
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Editor's Angle

25 Years Together

This issue marks a quarter century of *WOOD*® magazine serving the world with woodworking information. It's been quite a ride, and continues to get more interesting every day.

To be honest, I don't pay a lot of attention to silver anniversaries—unless, of course, we're talking about something personal such as my own marriage. In which case I'd better not forget it for obvious reasons. So when the staff and I sat down to plot a course for celebrating your favorite magazine being in existence for 25 years, we decided from the get-go to make it about you, not us. We're not going to extol all of the wonderful things we've accomplished since our inception, though you will learn about some of the more interesting milestones on *page 64*. Instead, you'll find the following:

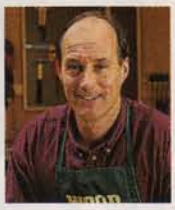
- *Page 8* features our small tribute to your incredible faithfulness as readers. It's a fact that you renew your subscriptions at a rate so high, it is the envy of the publishing world. And we never forget that. The best customers in the world deserve the best woodworking magazine anywhere, and that thought drives our work every day.
- On *page 58*, you'll find our list of the 25 greatest consumer woodworking innovations of the past 25 years. With so many inventive and helpful tools and trends to choose from, it took the entire staff's know-how to whittle down the list. Hopefully, you will even find some solid guidance on what to buy with those tool bucks burning a hole in your pocket. If you think we missed a deserving innovation, though, let me know at bill.krier@meredith.com.
- We also wanted to design several projects worthy of this big occasion. And I think we succeeded with the drop-front computer desk on *page 32*, the classic (but simple-to-build) rocking horse on *page 50*, and the file for storing past issues of the magazine (*page 66*).

Speaking of past issues, we also chose to celebrate our first 25 years with something a great many of you have requested: a comprehensive indexed collection of past issues on easy-to-store DVDs. The ad on the *next page* spells out the particulars of this offering.

What will the next 25 years bring? Your guess is as good as mine. I do know that as mass media continues to evolve, we will meet your information needs in any form you desire: on paper, DVD, online, videos, and via new technologies we have yet to dream up. And through our Web site, woodmagazine.com, the information sharing will be more and more of a two-way street, an even exchange between you, us, and the rest of the woodworking world.

Thanks for the memories—here's to many more!

Bill Krier



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Volumes 1 to 4 will ship in August 2009.
Volume 5 will ship in November upon completion of the final 2009 issue.

WD1009

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1984 • 2009
25TH
ANNIVERSARY
Thank You!
We've had a blast creating WOOD® Magazine for the past 25 years, and for that we sincerely thank you, our faithful readers.
In commemoration of our anniversary, we asked charter subscribers (5,895 strong) to send us a photo of themselves with issue No. 1.
We hope to serve you for another 25 years and many more!

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Shop Tips

Helping you work faster, smarter, and safer

From cutting board to template cutting

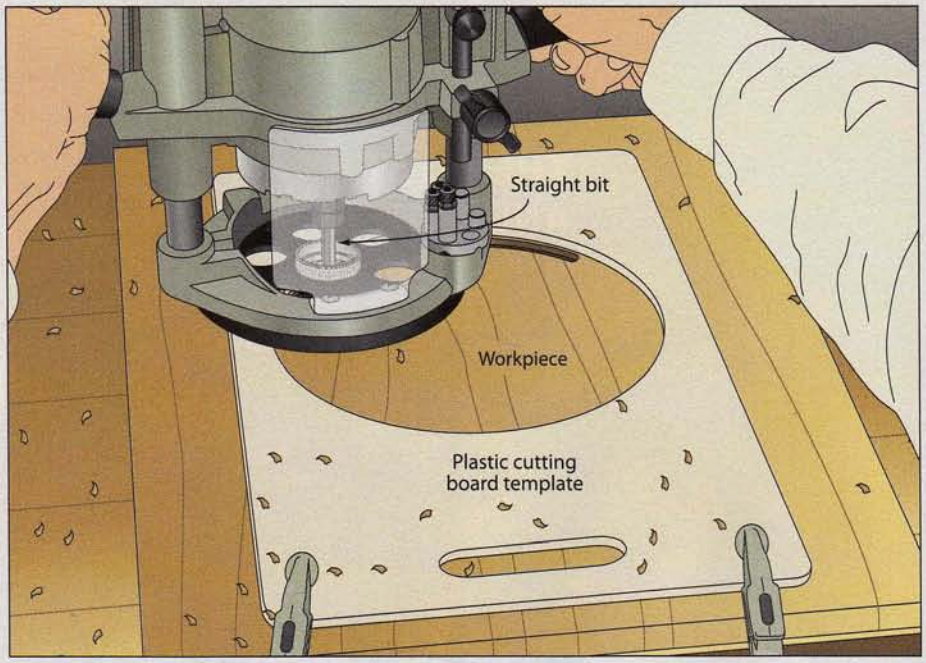
I found the perfect router template material in—where else?—my kitchen! Those polyethylene cutting boards make nearly indestructible templates for circle-cutting, butterfly keys, decorative inlay, or slot-cutting.

The boards machine to shape easily using regular woodworking tools and blades. Then just clamp one to your workpiece and rout away. I've even used the cutting board's built-in handle to rout mortises or to make handles in projects and shop jigs.

Top Shop Tip

The best feature of these cutting boards: their low cost. I find them for about a dollar apiece at discount stores.

—Serge Duclos, Delson, Que.

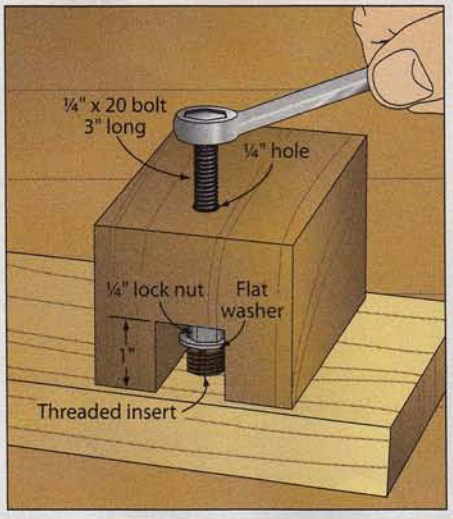


An on-the-level solution for screwy inserts

After drilling the pilot holes for several threaded inserts, I ran into a problem. When installing them by hand with a screwdriver, the threads cause the inserts to go into the hole angled by about 5°.

The solution: I cut a ¾" dado 1" deep through a 2×2×3" block of hardwood, and then drilled a ¼" hole into the center of the dado and through the block. With the dado side down, I dropped a 3" long ¼"×20 bolt through the top of the block and threaded a lock nut on the end until about ½" of the thread was showing below it. I added a washer and then hand-tightened the threaded insert against it.

With the block flat on the workpiece as shown, I thread the insert in the pilot hole by turning the bolt with a wrench. The block holds the bolt—and therefore the insert—perpendicular.



—Ray Pugh, Benton City, Wash.

continued on page 12

The Top Tipster

Photo: Ximena Grisceti Photography

Recognize the face? You saw it in this spot in the September 2008 issue. And if Serge Duclos' name rings a bell, it may be because he is perhaps the world's most prolific tipster: More than 120 of his woodworking shop pointers have been published.

For sending in this issue's Top Shop Tip, Serge receives a Dremel prize package including the Multi-Max, 300 series rotary tool, workstation, plunge router attachment, and a bevy of accessories.

Top tips earn tools!

Tell us how you've solved a workshop stumper. If we print it, you'll get $100 and a copy of *450+ Best-Ever Shop Tips* (woodmagazine.com/450tips). And, if your idea garners Top Shop Tip honors, we'll also reward you with a tool prize worth at least $300.

Send your best ideas, along with photos or drawings and your daytime phone number, to: **Shop Tips, WOOD Magazine, 1716 Locust St., LS-221, Des Moines, IA 50309-3023**. Or, by e-mail: shoptips@woodmagazine.com. Include your contact info in the e-mail.

Because we try to publish original tips, please send your tips only to *WOOD*® magazine. Sorry, submitted materials can't be returned.

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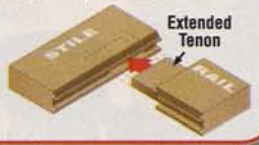


This Same Rail Bit allows for Stub & Extended Tenons

Stile Bit

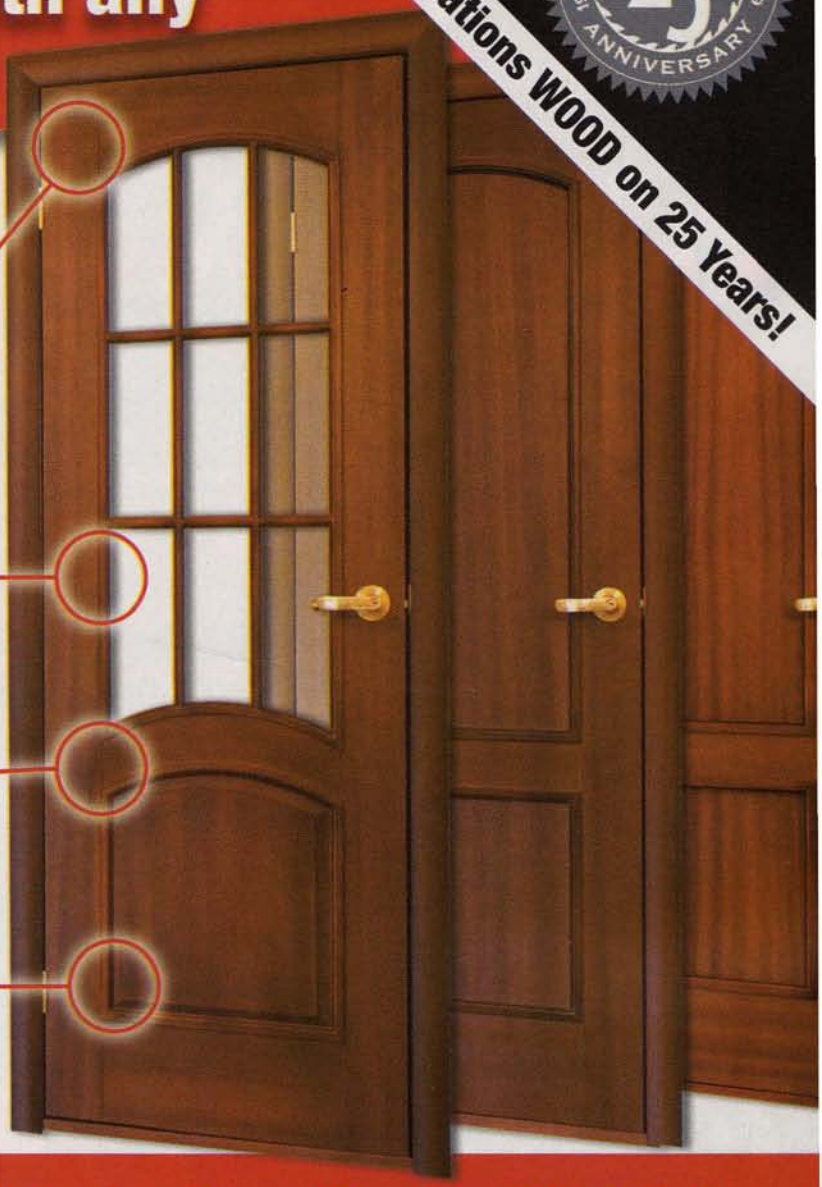
For Stile Cuts

Rail Bit

For Making Stub Tenon Cuts on Rails

Raised Panel Bit

For Making Raised Panel Cuts



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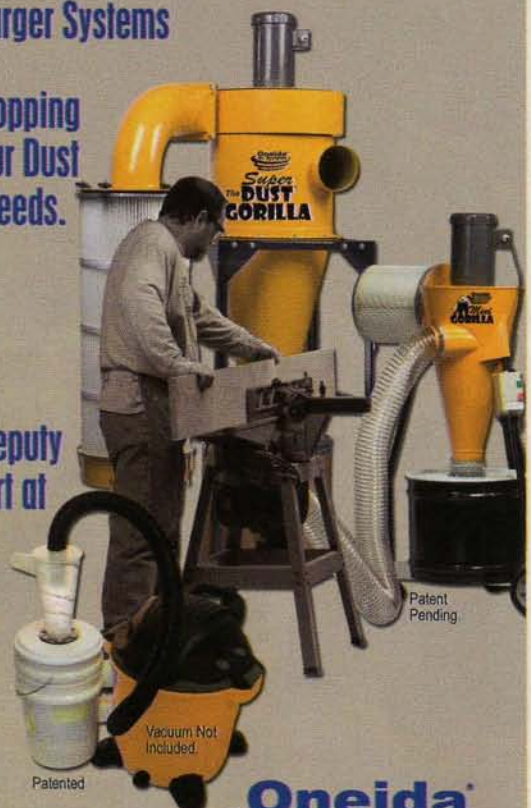

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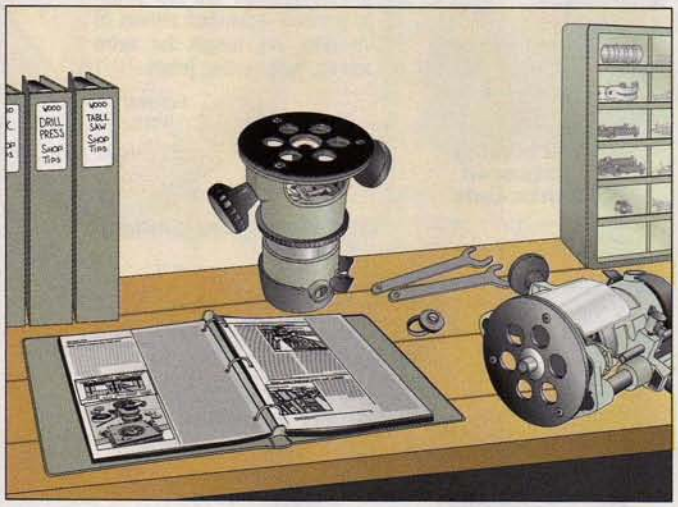
Shop Tips

Target tips by tool for better organization

Have you ever found yourself thumbing through past magazines trying to find a half-remembered tip? My solution was to photocopy the tips as soon as the magazine arrives, and then organize them according to the tool to which they relate. It's now much easier to look up a tip. Even my woodworking buddies occasionally make use of my tip library.

—Fred Mandel, Dinsmore, Sask.

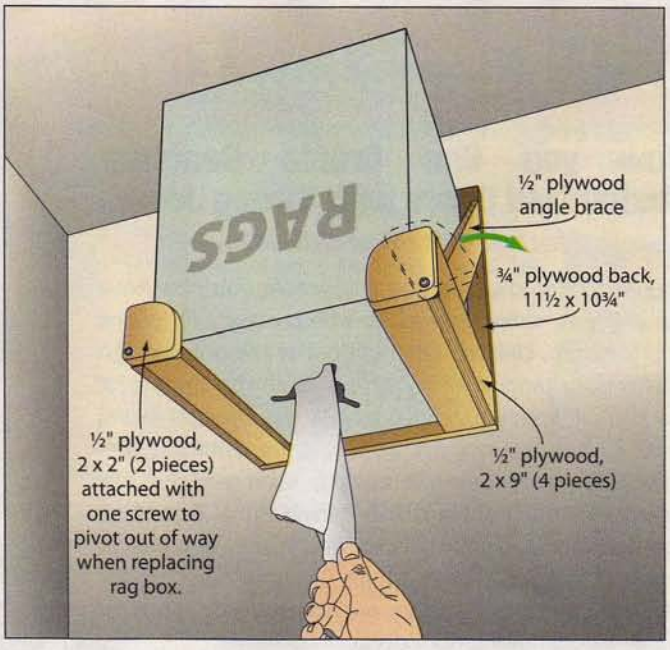


Secure the bouncing rag box

While finishing some cabinets in my shop, I reached back to pull a heavy-duty paper towel out of its box. Unfortunately, the entire box followed and knocked over the open container of finish on the way. While cleaning up the gooey mess, red-faced and frustrated, I resolved to fix the problem of the bouncing box.

The result was the wall-hung box holder seen here. If you mount the box upside down in a high location, you'll be pulling against the box every time you reach for a rag. And the box will remain secure down to the very last rag.

—Richard Shahan, Edina, Mo.

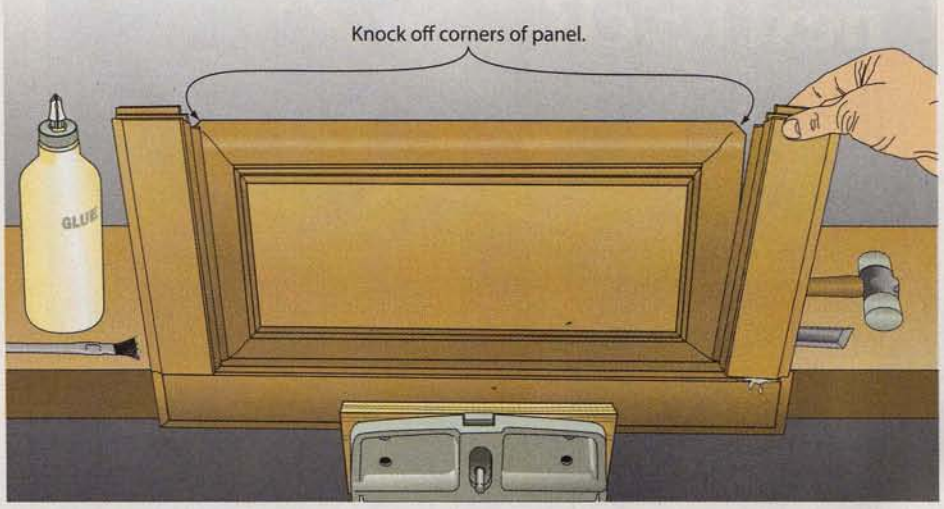

RAGS
½" plywood angle brace
¾" plywood back, 11½ x 10¾"
½" plywood, 2 x 2" (2 pieces) attached with one screw to pivot out of way when replacing rag box.
½" plywood, 2 x 9" (4 pieces)

Cutting corners pays off for panels

After a raised-panel split in a cabinet door, I performed an autopsy to see what caused the failure. It turns out some glue squeeze-out froze the panel corners in place preventing the wood from contracting without splitting.

Now, before I glue up my raised-panel doors, I always knock off the corners of the panel with a chisel—just ¼" or so to make sure it stays hidden. I've had no more split doors since I started doing this because any squeeze-out can't reach the panel's corners.

—John Hammen, Kaukauna, Wis.

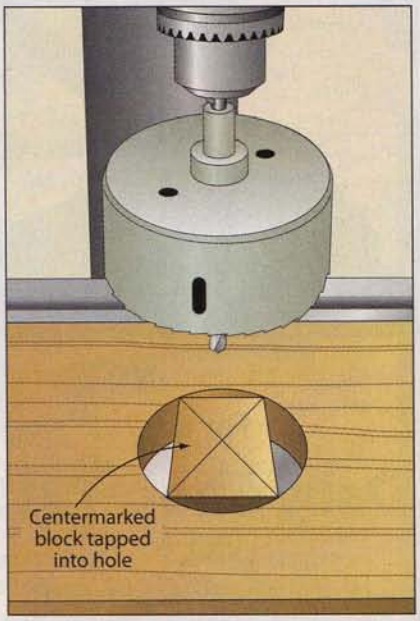


Square plug in a round hole for redrilling

To enlarge existing holes, especially large ones made with a Forstner bit or holesaw, you can't just plug them with a dowel and then redrill. Last time I found myself in this spot, I realized that the filler plug didn't necessarily have to be round. A block of scrap wood does nicely.

Size the block for a snug fit in the hole, then mark the center of the block by drawing lines from corner to corner. X marks the spot for drilling the larger hole because the centermark of the block is also the hole centermark.

—Mike Randall, Ohai, Southland, New Zealand



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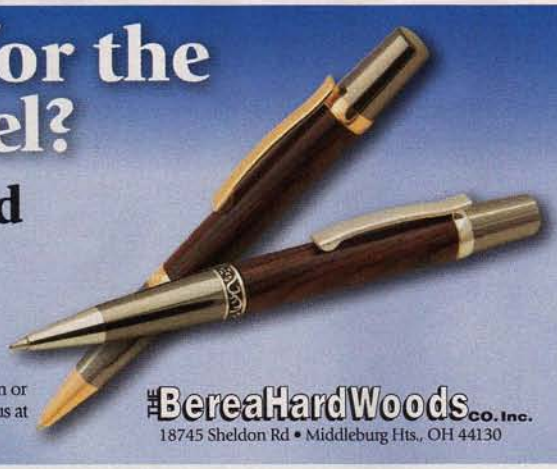

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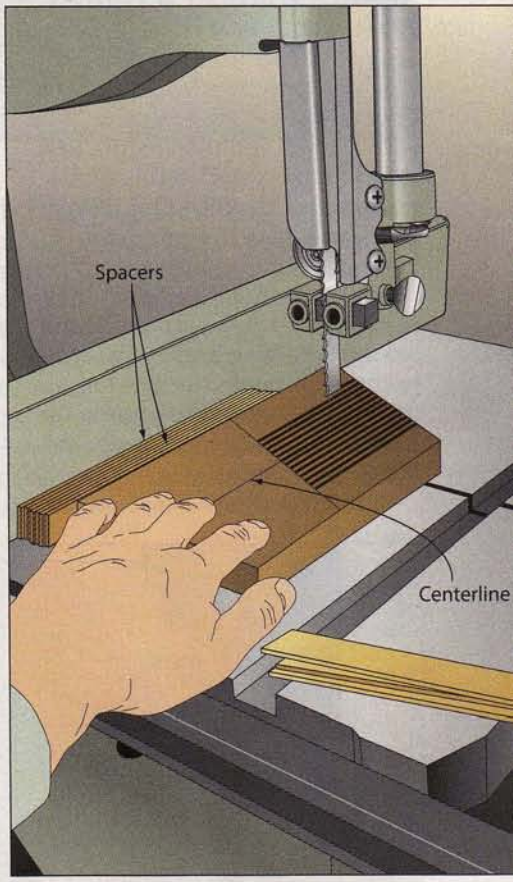
Shop Tips

Fast and even featherboards

I saw your Ask *WOOD*® piece on featherboards in the Dec/Jan 2007/2008 issue (no. 181, p. 92), and wanted to share my method for making all those cuts quickly and accurately.

First cut several spacers 1/16" thick and 6" long. Draw a line down the center of the featherboard blank, and set your bandsaw's fence to make the first cut down that centerline. Add a spacer between the fence and the blank and make a second cut. Then, flip the board edge-for-edge to make a matching cut on the other side of the centerline. Repeat the process of adding spacers and making matching cuts to complete the featherboard.

—Fred Noland, Clarkston, Wash.

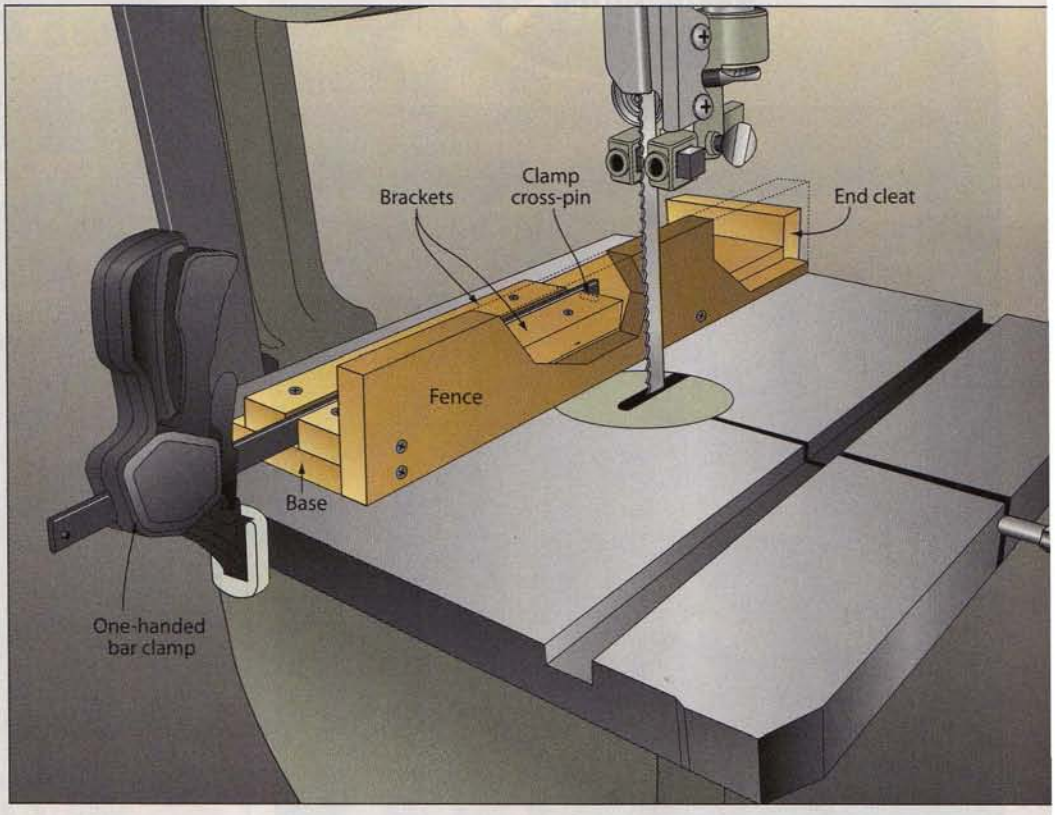


For a **Daily Shop Tip** visit woodmagazine.com/tips

Cannibalized clamp makes a quick-release fence

After hunting for a rip fence small enough to fit my benchtop bandsaw, I came up with the quick-release one shown here. The simple L-shape scrapwood fence has a cleat at the rear that drops over the back edge of the table. On the business end, a set of brackets holds the bar of a one-handed bar clamp. I removed the fixed jaw of the clamp and dropped it between the brackets. The clamp's cross-pin pulls against the brackets when the clamp presses against the table, tightening the fence in place.

—Vincent Durante, Huntsville, Texas



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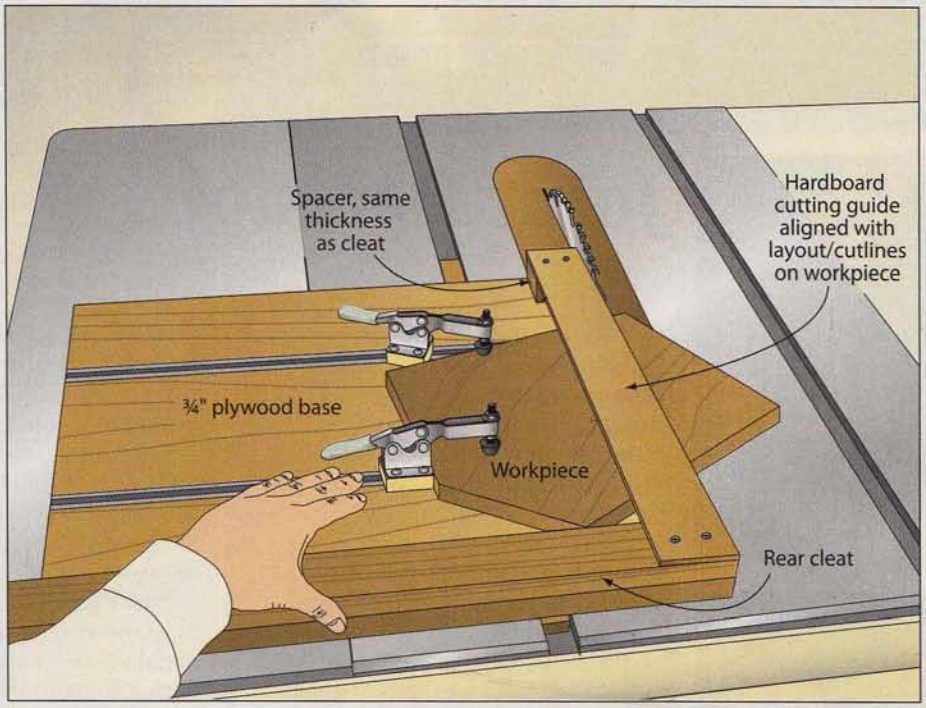
Arrow-straight cuts for odd-shaped parts

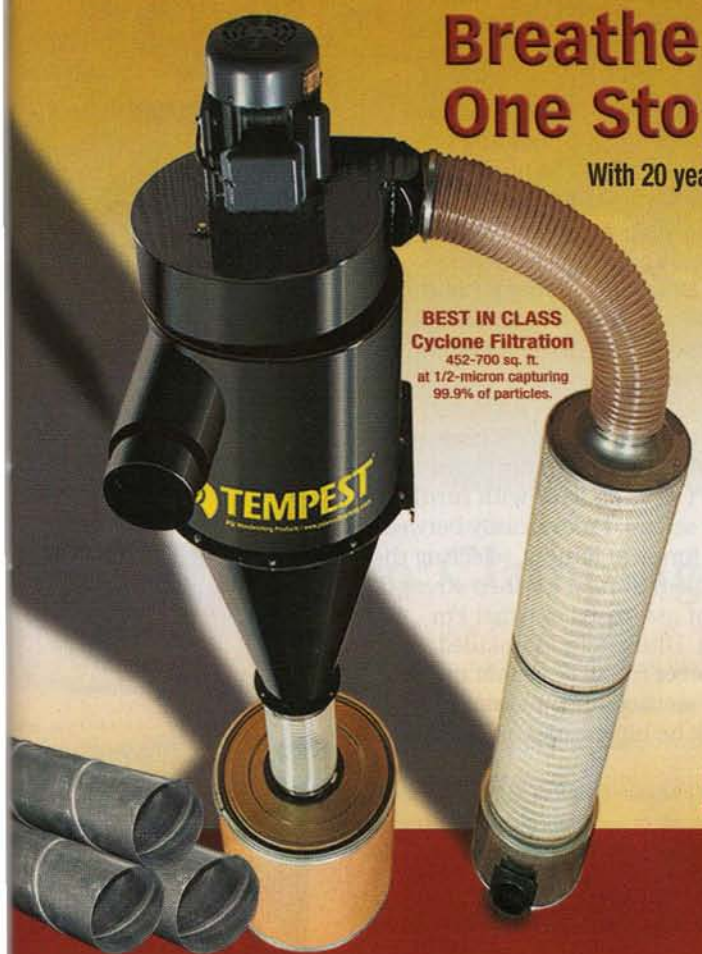
I recently completed a project that required several irregularly shaped plywood panels. Although the sides all had to be straight, there wasn't a 90° angle to be found. Here's the tablesaw sled I came up with to accomplish the awkward task.

To make one for yourself, rout channels on the plywood base for the T-track, and then assemble the base, cutting guide, and hardwood rear fence. Attach them to the miter slot runner so the right edge passes just to the right of the saw kerf. Make a first pass through the tablesaw to cut the sled precisely even with the saw kerf. Add the T-track and toggle clamps.

Lay out the cutlines on your workpiece and simply align the workpiece with the cutting guide, securing them with toggle clamps. The cut runs straight regardless of the angle.

—Alan Schaffter, Washington, N.C.





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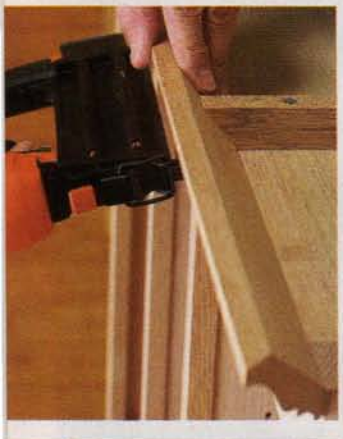


Joint Decisions

Looking back on my first projects, they seem like test boards to see how many metal fasteners I could drive into a joint.

The more I learned from other woodworkers though, the more I got the impression that "fastener-enhanced" joints were inferior to all-wood joinery. I started cutting dovetails to hold plywood casework together, and I routinely attempted to use hot hide glue to attach moldings without the need for brads. It got so bad, I started hiding my need for metal fasteners from my buddies—I was afraid my work would be considered cheap. Is that really the case?

No way.

Many joints so common today—mortise and tenons, dovetails, and dadoes—evolved over hundreds of years of trial and error and were traditionally cut laboriously by hand. These joints have tremendous strength, and the old masters used them because wood was really all they had to work with.

Metal fasteners weren't out of bounds back in the 18th century, just out of reach because of their cost. Forged nails and hand-threaded screws were so valuable, in fact, that old homes were often burned down, with the fasteners screened from the ash to be used again in new construction. Using these scarce nails and screws in woodworking projects was an acceptable and time-saving skill. Yes, I said "skill."

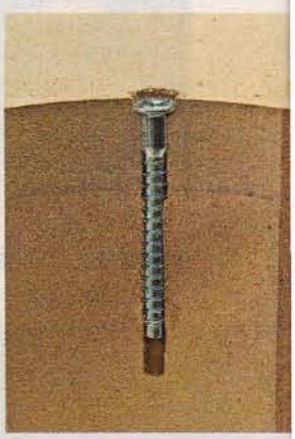
However, as industrial processes improved, nails and screws were spit out by the millions in factories. That meant that as long as the average wood butcher could drive a fastener, homeowners and budding furnituremakers could build whatever they wanted. No wonder skilled woodworkers rebelled and began to hold all-wood joinery in such high esteem. Cutting those precise joints—whether by machine or by hand—is a mark of accomplishment.

Now that I have experience with most forms of joinery, I think this metal vs. all-wood argument is off base. Both joinery forms have merit. When I build plywood cabinetry, cutting dovetail joints to join the carcase has little if any advantage over a well-executed dado joint reinforced with screws. Using a pneumatic pinner to tack molding onto a project? I do it all the time. Pocket screws to join parts of a face frame? It's fast, easy, and strong enough.

Does this mean you should give up on all-wood joinery? Of course not. In fact, to help keep my skills honed, I try to build two or three projects each year with absolutely no metal fasteners, just to challenge myself. But for most of my projects, I just don't have an issue with turning to brads or screws. I move easily between the two forms of joinery, selecting the best of them in turn for their strength or ease of use, based on what I'm building. Ultimately, as a skilled woodworker friend once told me, "Pick the best method for the situation."

I think he hit the nail on the head.

The Shop Monkey (aka Tom Iovino of Tampa, Fla.) blogs prolifically at woodmagazine.com/shopmonkey.



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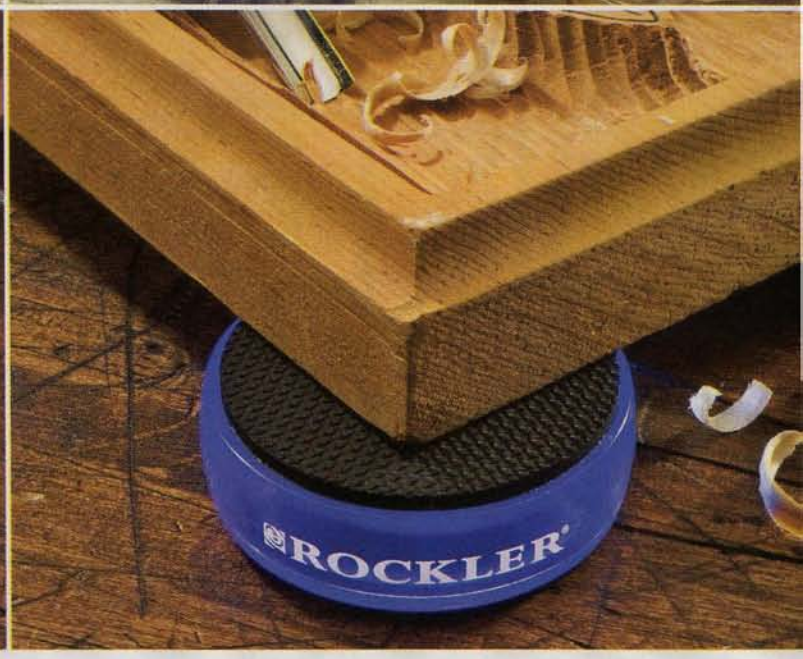

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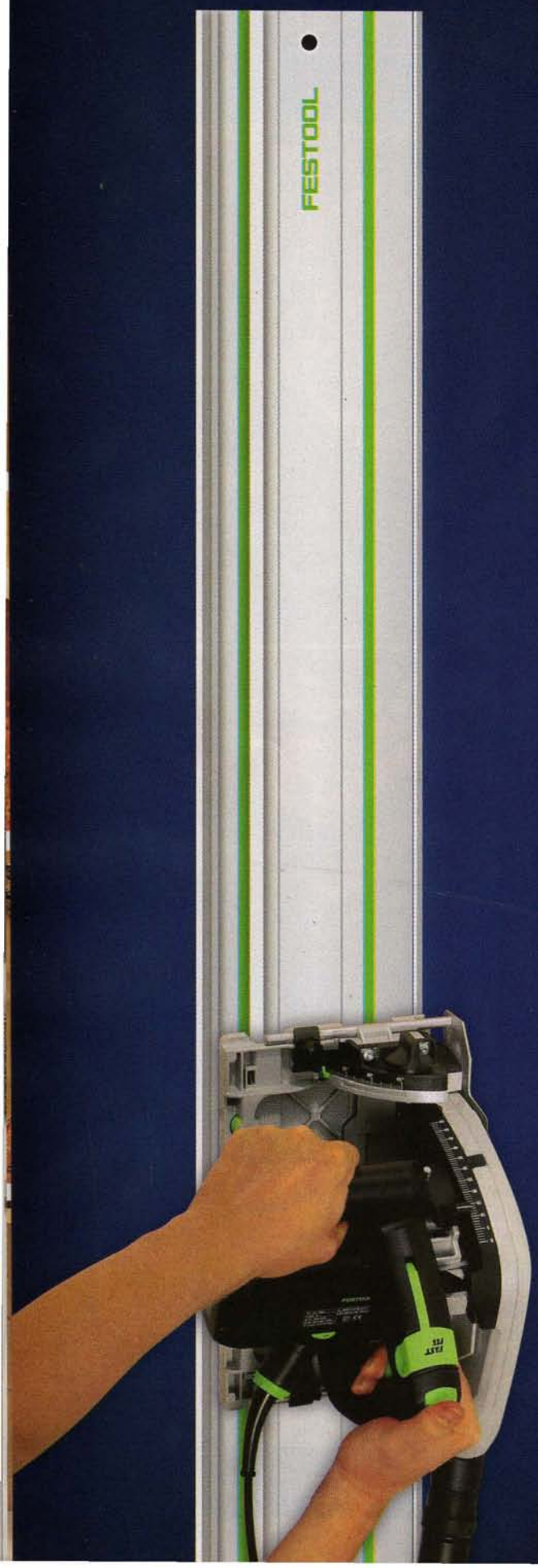

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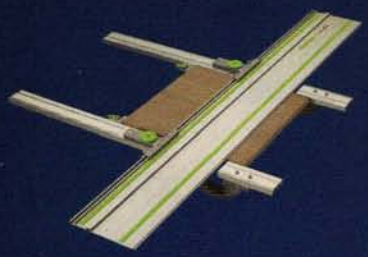

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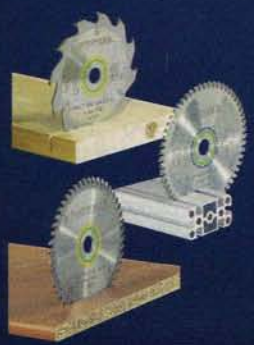

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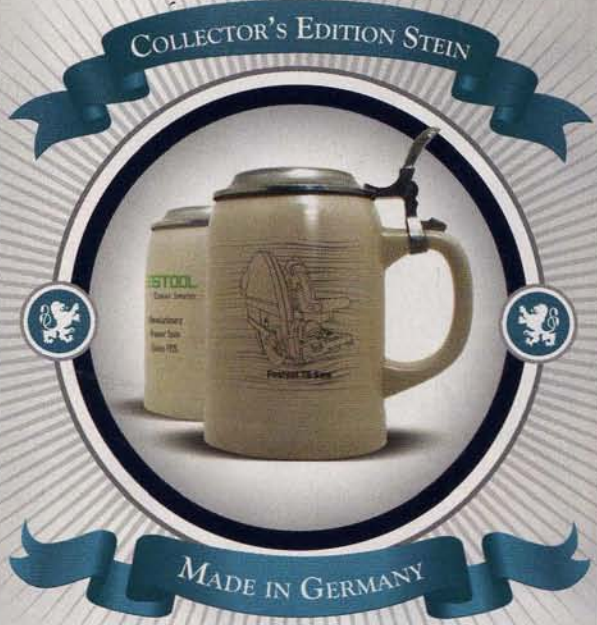

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Wise Buys

Our Editors Test
Right-angle Assembly Squares

Why buy?
Machining stock precisely is only half the battle in creating projects with square corners. You also have to assemble and clamp the corners squarely. To do that you need assembly aids that hold those right angles until the glue dries or you can secure those corners with screws or nails. We recommend the models below. You also can save money by making your own braces using the free plan at woodmagazine.com/brace.

ROCKLER CLAMP-IT SQUARES

4" brace (#27767), $10; 8" brace (#29190), $12; 4" clamp (#20201), $7; 5" clamp (#61003), $8; Deluxe kit (#69970), $70 (2 braces and 4 clamps in each size)

Editor test-drive:
Initially, I was skeptical that plastic squares would be durable and accurate. Not any more. These lightweight clamping aids proved tough, precise, and helpful as I put them to use in several projects. The squares have three features that make clamping easier. First, the beveled outside corner doesn't get into glue squeeze-out. Second, notches in the arms receive the proprietary clamps to hold them in place. And third, the 8" models have predrilled holes in the body, and I used them to screw the squares to a plywood base, creating a 90° fixed clamping station.

I'm not as crazy about the provided clamps, though. They're miniature bar clamps, but different in that the tailstock slides along the bar while the headstock remains fixed. These take some getting used to, and they definitely require two hands to clamp a brace to an assembly. (Rockler promotes this as a one-handed application.) I'd prefer F-style clamps with sliding headstocks. I also found that on the notches nearest the corner, the clamp bars hit each other.

—Tested by Marlen Kemmet, Managing Editor

To learn more:
800-279-4441; rockler.com

JEVONS 3-D CLAMPING SQUARES

Set of 4, $60 (Clamps not included)

Editor test-drive:
Shop-made right-angle braces help get my projects square and are easy to make, but too often they get banged around to the point of becoming unreliable. So I like the durability of the Jevons 3-D squares, with rigid 3/16"-thick aluminum angle that holds up to abuse from clamps and mallets. But their best feature proves to be accuracy: The 6"-long arms are perfectly flat and exactly 90° to each other.

Lately I've been building a lot of cabinets and while assembling the carcases, face frames, and drawer boxes, I found them valuable for holding mating parts true while getting the clamps in place. The result: flawless 90° corners. I also like the predrilled holes in each brace. With these you can screw them right to a project (if the holes won't show), or you can make jigs by screwing them onto plywood or MDF. I was able to use any style of clamp with them, so you don't have to buy special ones just to use these squares. They're versatile, lightweight, accurate, and affordable. Who doesn't need that?

—Tested by Kevin Boyle, Senior Design Editor

To learn more:
888-923-0023; jevonstoolco.com

PINNACLE CLAMPING SQUARES

2¾" brace (#147850), $25/pair;

6" brace (#147530), $35/pair

(Clamps not included)

Editor test-drive:
In the past I struggled with trying to get drawers square—even half-blind and through dovetails and box joints—while measuring the diagonals and adjusting the clamps before the glue could set. Pinnacle's squares eliminate that worry. All I have to do is lightly secure two squares in opposing corners (I use small F-style or one-handed bar clamps) to hold them square, and then add longer clamps to pull the joints together tightly.

These machined aluminum squares proved accurate to within 0.001" of 90° over their 6" length. I like the rounded corners that allow clamping inside or outside the box without getting into glue squeeze-out. To help assemble a bunch of picture frames, I screwed three squares to an MDF jig, guaranteeing three square corners. Then I glued the pieces, placed them in the jig, and clamped the fourth square against the open corner for perfect frames time after time. The small models also worked great for squaring the bracket feet on a bookcase.

—Tested by Bob Hunter, Tools & Techniques Editor

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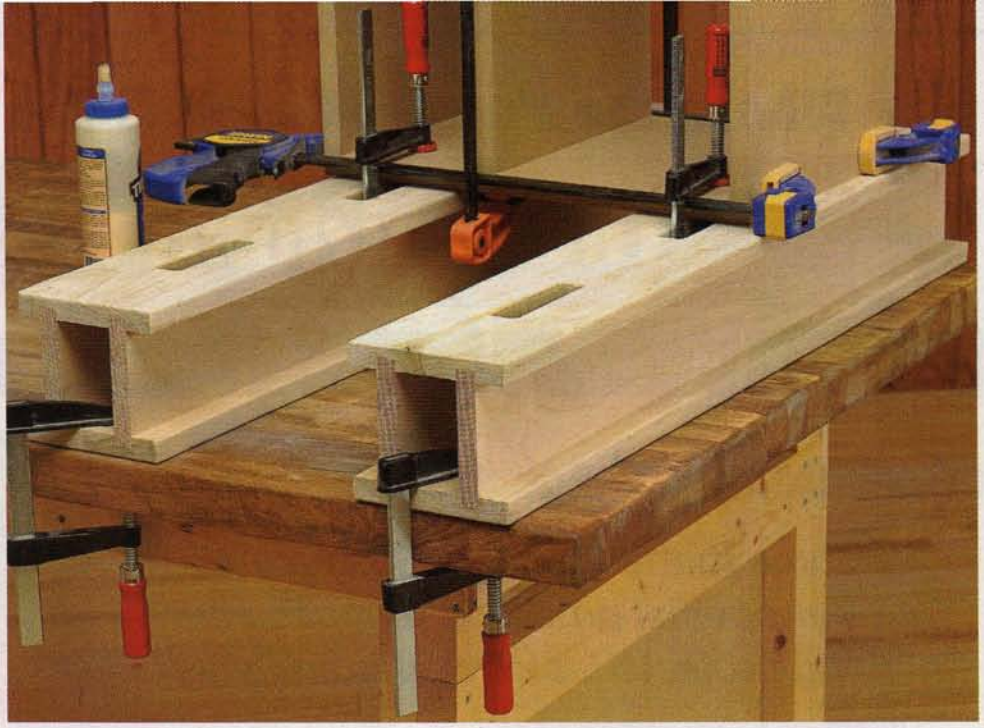
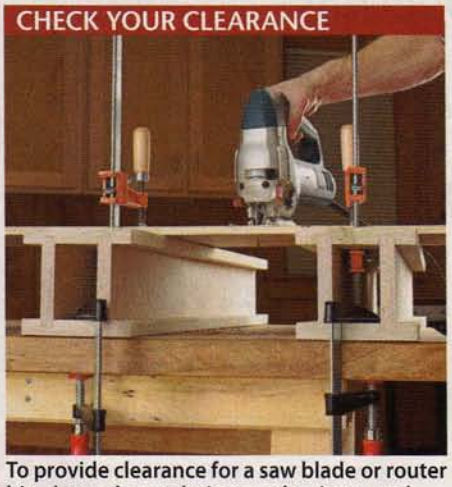


Why settle for a chunk of 4×4 to lift projects off your bench when these risers do so much more? Assemble carcases on them to create room for clamp heads [*top* **photo**]. They provide blade clearance when cutting pieces with a circular saw or jigsaw [*near right* **photo**], and raise workpieces to a comfortable working height when routing an edge. To glue panels face-to-face, use the risers to apply pressure across the full panel [*far right* **photo**]. You can even use them as a step when reaching for items on a just-out-of-reach shelf.

We used poplar for the tops and bottoms, and ¾" Baltic birch plywood

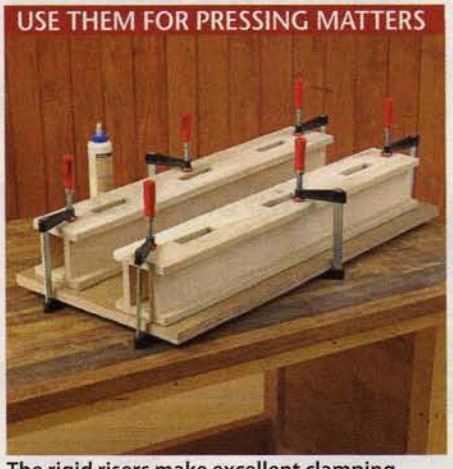
continued on page 26

CHECK YOUR CLEARANCE



To provide clearance for a saw blade or router bit, clamp the workpiece to the risers, and secure the risers to your bench.

USE THEM FOR PRESSING MATTERS



The rigid risers make excellent clamping cauls. We glued up this hardboard-and-plywood lamination with only six clamps.

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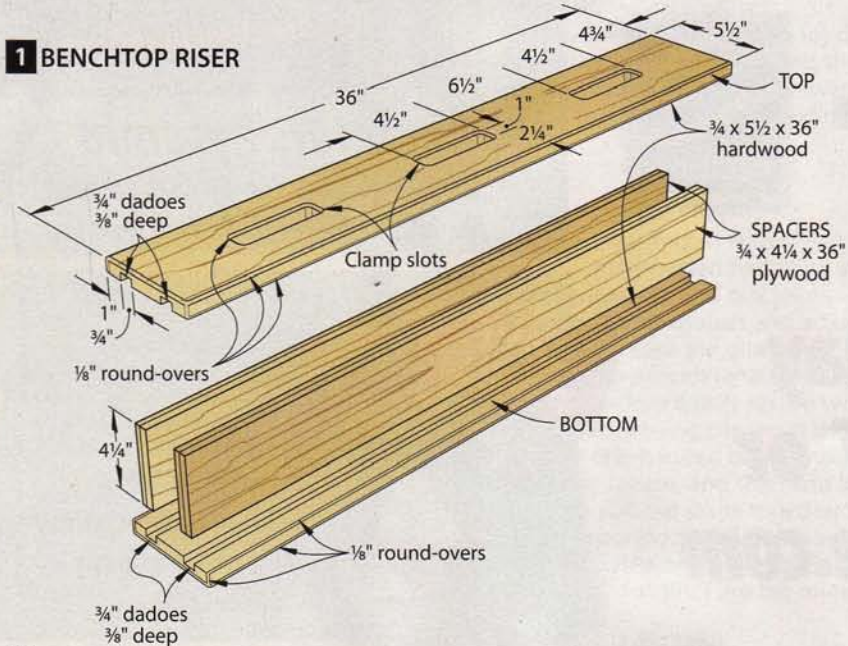
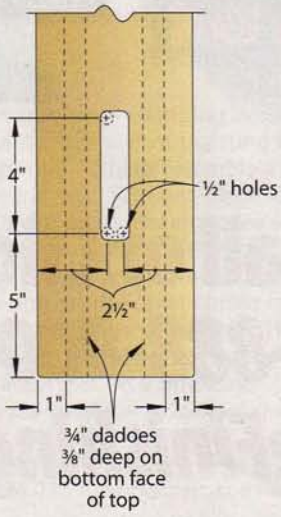


1a CLAMP SLOT DETAIL



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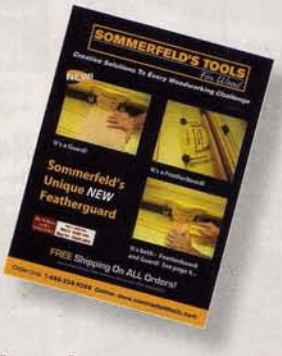

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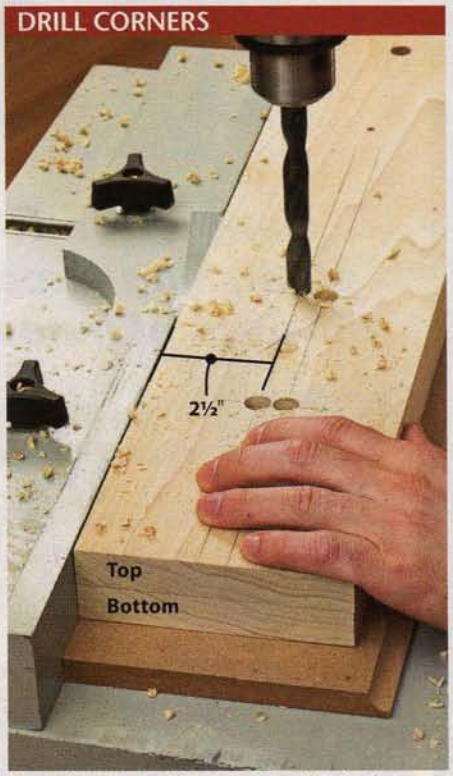

Tape the top and bottom together before drilling holes to establish the slot corners. Separate the pieces before cutting the slots.

for the spacers, but any solid stock or plywood will do.

Start by cutting the parts to size [**Drawing 1**, *page 24*]. Then, to create the clamp slots, lay out on each top piece the centerpoints for the holes that create the corners of each slot [**Drawing 1a**]. **Note:** *As shown, the 1"-wide slots accept the head of an F-style bar clamp. You can make the slots as wide as the distance between the spacers, if you like.* Set up a ½" bit in your drill press, and position the fence to align the bit over a centerpoint; then drill out the corners on one side of each slot [**photo** *above*]. Rotate the boards end for end, and drill the remaining corners. To complete the slots, separate the pieces, draw lines connecting the outside edges of the holes, and cut along the lines with a jigsaw. Sand the edges smooth.

Rout ⅛" round-overs around the top and bottom of each slot and along the tops and bottoms where shown. Then plow out the grooves in the tops and bottoms to accept the spacers, and glue and clamp the risers together. Keep the risers near your bench; you'll reach for them time and time again.

Project design: **Bob Wey, Westford, Mass.**

WOOD® Magazine's WOODWORKING SHOWDOWN

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Break Free From

Biscuit Blunders

Biscuit joints are simple to cut, but difficult to fix when done wrong. Here's how to avoid the most common mistakes.

Thinking ahead pays off when joining workpieces with biscuits. By properly positioning your slots you'll enjoy perfect-fitting joints every time. Regardless, remember the best tip for all biscuit applications: Make test cuts on scrap pieces before cutting the real thing. Now, keep these solutions in mind.

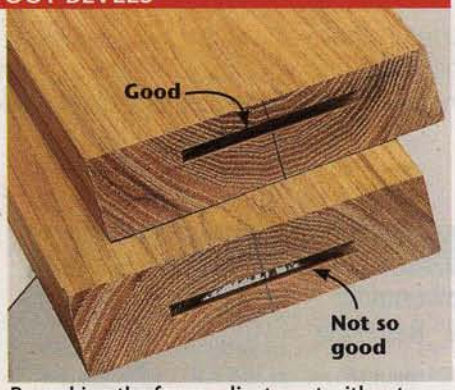
Mistake #1: Exposed biscuit slots

Cutting through the face of a workpiece's beveled end, as shown *above right*, causes damage nearly impossible to repair. This goof happens when you cut a slot for a large (#20) biscuit at the midpoint of the bevel in ¾"-thick stock.

Solution: Avoid this mistake by cutting the slot closer to the inside corner of the beveled end. To do this, adjust your joiner's fence, as shown at *right*. This allows you to still use a #20 biscuit without cutting through the face. (You should always use the largest biscuit possible for maximum holding power.)

SIMPLE ADJUSTMENTS SAVE BLOWN-OUT BEVELS

For beveled joints in ¾" stock, set the fence height at ¾" to move the slot closer to the inside corner.



By making the fence adjustment without changing biscuit size, we were able to cut an ideal slot into the top workpiece.

Mistake #2: Mating surfaces misaligned

If the mating biscuit slots you cut don't match up perfectly, the workpiece surfaces will not be flush, as shown at *right*.

Solution: First, reference your cuts from the same workpiece surface (the top face). Second, don't use your joiner's base and fence together for alignment when cutting the slots; both might not make parallel contact, resulting in uneven slots. Instead, reference your cuts either with the base resting on the benchtop or worksurface, as shown at *far right*, or with the fence resting on the face of the workpiece.

continued on page 30

USE THE SAME REFERENCE POINTS TO ENSURE ALIGNMENT

This hardwood edging doesn't align with the panel because the panel and edging slots were cut from different reference surfaces.

Correctly machine slots by raising the fence out of the way and then resting the joiner's base on a flat worksurface.

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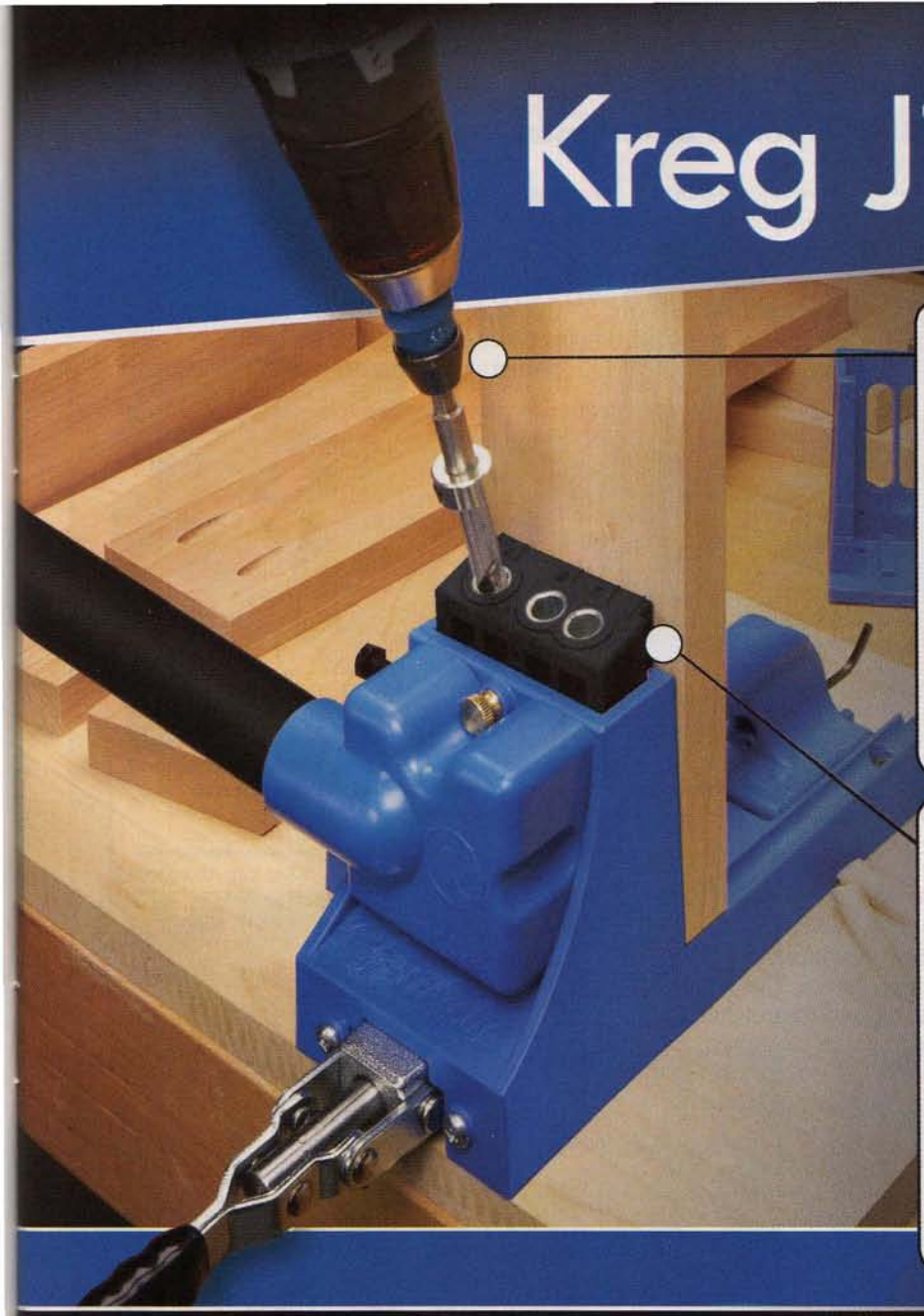

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Avoiding Workshop Goofs

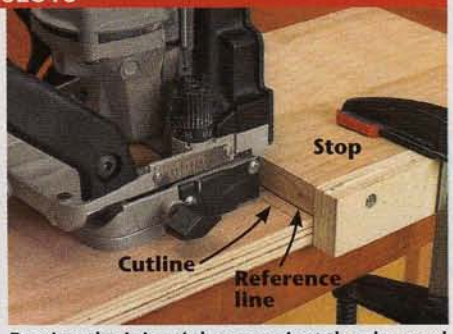
Mistake #3: Crooked or unsquare slots

The start-up torque of a joiner can cause it to lurch when powered up. Resulting slots might be unsquare, as shown *below*.

Solution: Never make field cuts (in the interior of a workpiece) freehand. Instead, clamp a stop to your workpiece—right on the line for the bottom of the mating board—and use that as a reference point for the joiner, as shown *below*. To counteract the lurching, start the motor and then line up the joiner with the mark before plunging to make the cut.

USE A STOP TO GUARANTEE SQUARE SLOTS

The biscuit joiner cut this slot unsquare to the edge because it strayed from the marks when the motor engaged.



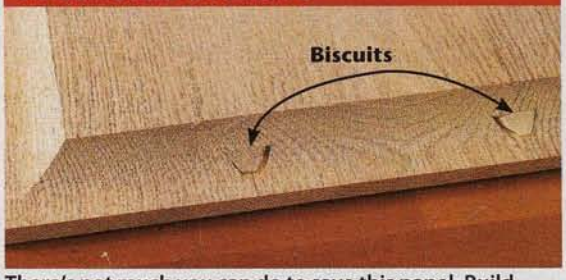
Resting the joiner's base against the clamped stop not only steadies the tool but also ensures a slot square to the edges.

Mistake #4: Exposed biscuits

It's easy to forget where you positioned the biscuits in an edge-glued workpiece. This can lead to cutting into them when machining a profile, as shown at *right*.

Solution: Simply put, plan ahead. If you know you're going to machine the edges and ends of a panel, be sure to locate the biscuits far enough from the edges and ends so they won't be exposed.

PARDON ME, BUT YOUR BISCUITS ARE SHOWING



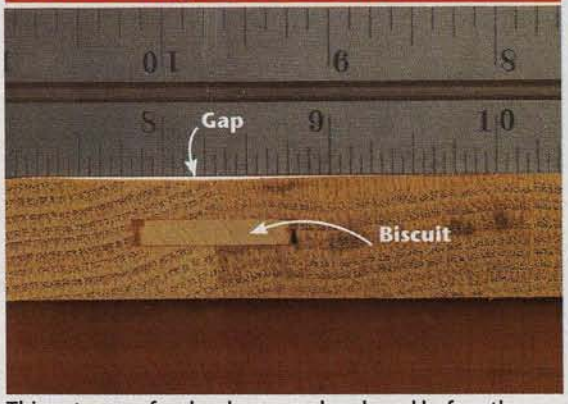
There's not much you can do to save this panel. Build another one and place the biscuits farther from the ends.

Mistake #5: Glue-line depressions

Even though biscuit joints are strong enough to unclamp after a couple of hours, planing or sanding these workpieces right away could result in scooped recesses over the biscuits. Why? The glue around the biscuit causes the wood to swell slightly. Machining off these temporary "humps" results in shallow depressions once the glue fully dries, as shown at *right*.

Solution: Allow your glued-up workpieces to dry for 24 hours before machining. The humps will have shrunk back to normal size by then.

DIMPLES MIGHT BE CUTE, BUT NOT ON JOINED BOARDS



This cutaway of a glued-up panel—planed before the glue around the biscuits dried—reveals the recessed area, which will be more noticeable under a high-gloss finish.

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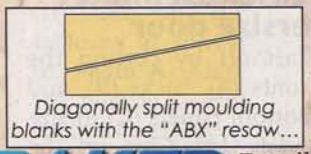

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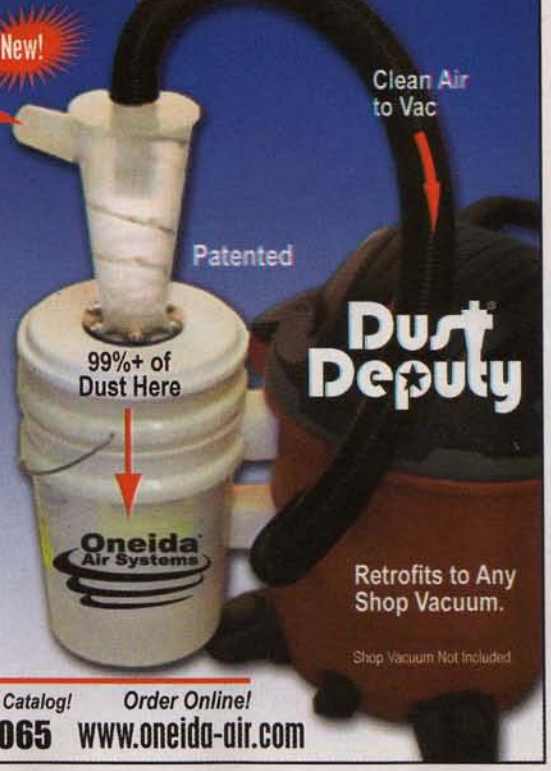

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Drop-Front Desk

With its compact footprint, this desk serves as a perfect computer workstation in the kitchen or bedroom. The handsome frame-and-panel case will be a focal point wherever you put it.

Create striking panels like the one on the desk's door (*below*) by just gluing veneer to MDF—no vacuum veneer bags or special equipment required. The article on *page 54* shows how, but you could skip this step and use cherry plywood. (We used cherry veneer on the inside faces and dressed up the outsides with sapele pommele.)

The thickness of the panels determines setups for cutting joinery. So if you choose to use veneer on your desk, start by making veneered panels for the top and bottom (C), sides (H), door (K), and back (M) [**Materials List**, *page 38*].

Make the case assemblies and an oversize door

1 Start off by cutting the fronts (A), backs (B), and top/bottom panels (C) to size [**Materials List**]. Glue up the

Veneer, including a book-match on the door, creates eye-catching panels.

PROJECT HIGHLIGHTS

- Overall dimensions are 24½" wide × 16" deep × 50¼" high.
- Materials needed: Cherry, MDF and veneer or cherry plywood.
- Choose from dozens of types of veneers for the perfect look.

pieces, keeping the ends and inside faces flush [**Drawing 1**]. After the glue dries, sand the assembly to 220 grit. Set these assemblies aside for the time being.

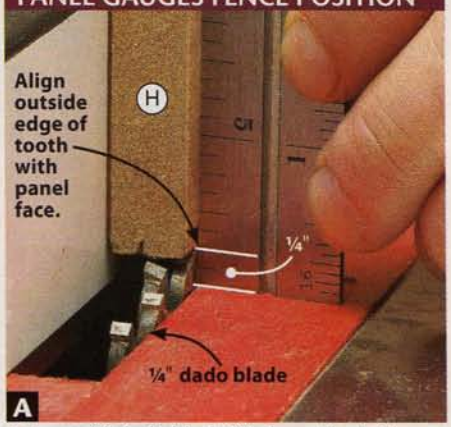
2 Rip ¾"-thick stock to width for the front stiles (D), back stiles (E), top rails (F), and bottom rails (G) [**Drawing 2**]. Crosscut the rails to finished length, but crosscut the stiles ¼" longer than listed. Trim the panels (H) to size. Next, rip the door stiles (I) and rails (J) ⅛" overwidth [**Drawing 1**]. Crosscut the rails to finished length and the stiles ⅜" longer than listed. Then, cut the door panel (K) to size.

3 The inside faces of the side and door panels (H, K) sit flush with the inside faces of the frames. On the door, this provides a smooth writing surface. Using a side panel (H), set up the tablesaw as shown in **Photo A.** Mark the outside face of each stile (D, E, I) and rail (F, G, J). Then, with the mark facing away from the fence, cut a groove along one edge of each rail and stile. Also cut a groove in the inside faces of the back stiles (E) and top/bottom panel backs (B) [**Drawing 1**].

4 Now start cutting stub tenons on the rails (F, G, J) to fit the grooves. To do this, place a rail next to the blade with the outside (marked) face up and adjust the blade to align with the groove [**Photo B**]. Reposition the rip fence and, with the outside face up, cut a ¼"-wide rabbet along each end of each rail [**Photo C**]. With the same setup, cut a rabbet around the side and door panels (H, K) [**Drawings 1, 2**].

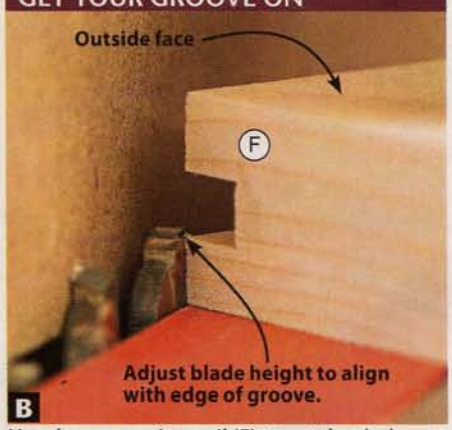
5 Reset the blade height using the

PANEL GAUGES FENCE POSITION



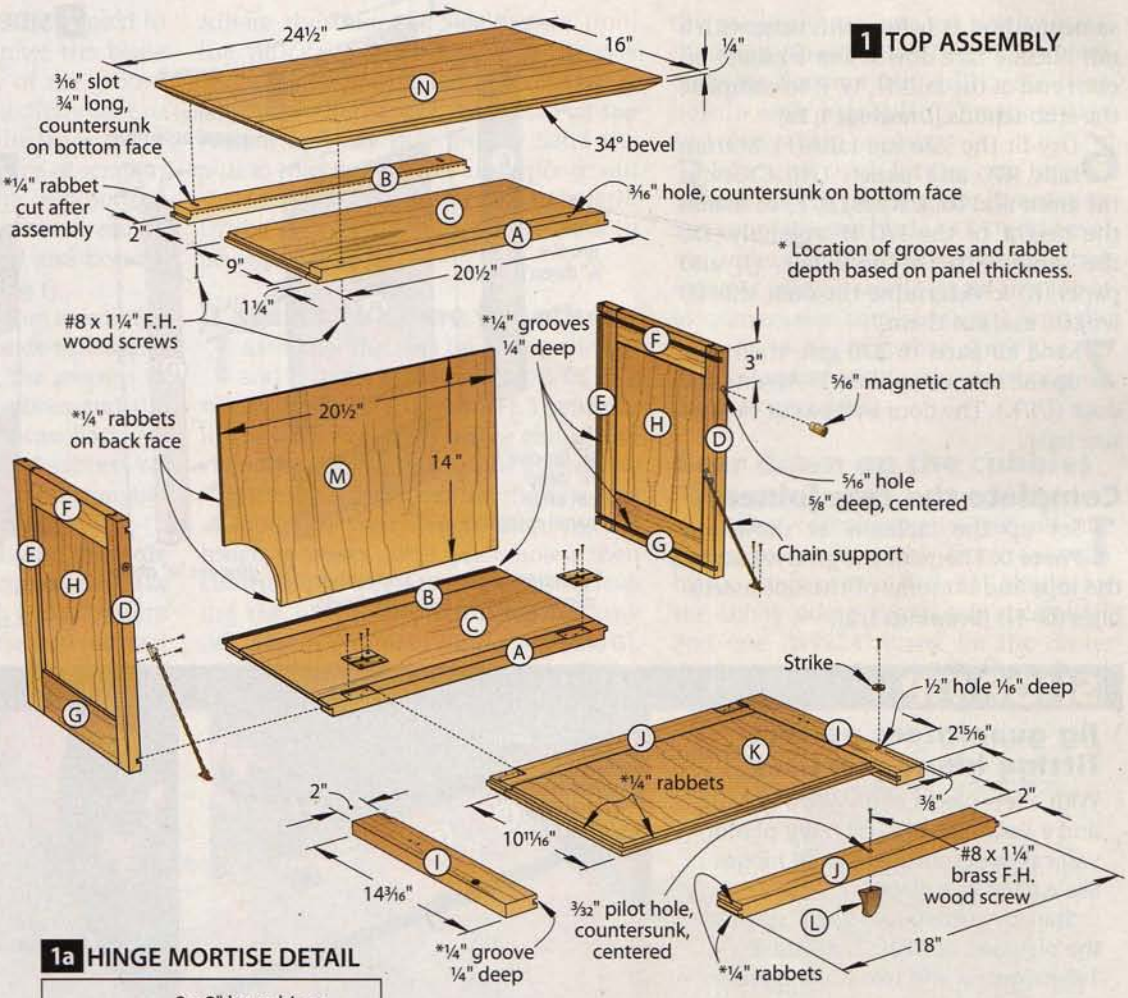
Set up a ¼" dado blade ¼" above the table. Place a panel (H) against the fence, and align the face with the outside edge of a tooth.

GET YOUR GROOVE ON

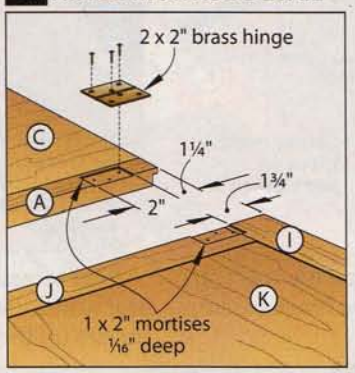


Use the groove in a rail (F) to set the dado blade height. Align the highest point of the teeth with the low edge of the groove.

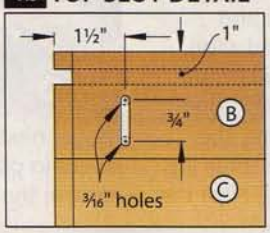
1 TOP ASSEMBLY



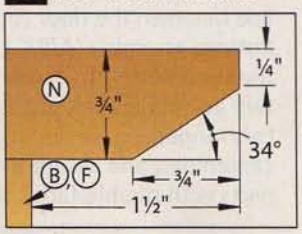
1a HINGE MORTISE DETAIL

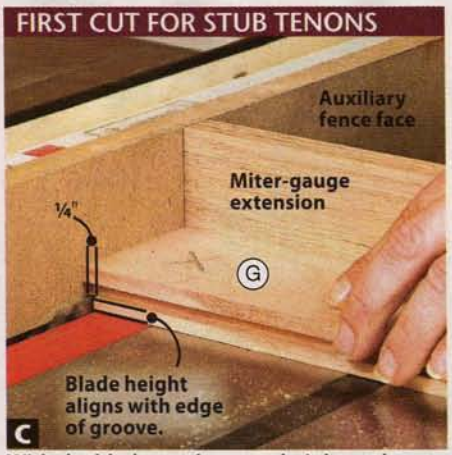


1b TOP SLOT DETAIL

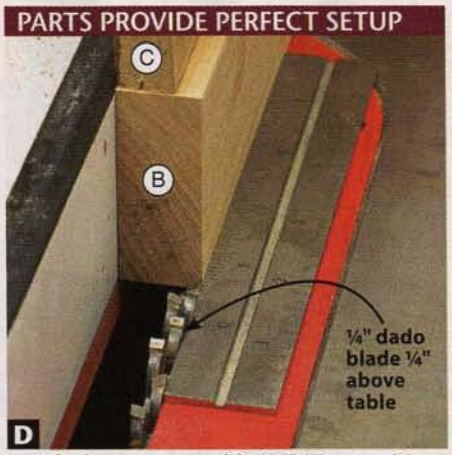


1c TOP EDGE DETAIL

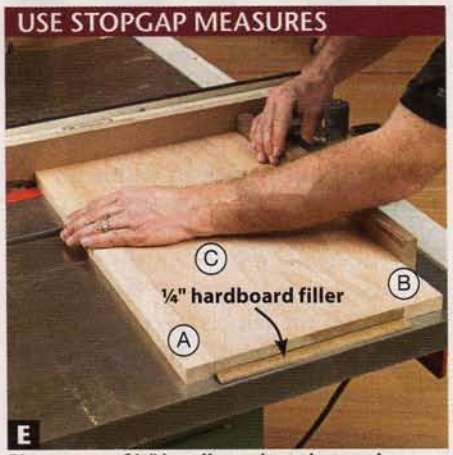




With the blade set the same height as the bottom of the groove, cut a rabbet on the inside face on both ends of each rail (F, G, J).



Use the bottom assembly (A/B/C) to position the rip fence before cutting the ¼×¼" top and bottom grooves in the side assemblies (D–H).



Fit a scrap of ¼" hardboard or plywood between the panel front (A) and back (B) to back up the inside edge and stop chip-out.

same method as before, this time with a rail outside face down. Cut a rabbet on each end of the rails (F, G, J) to complete the stub tenons [**Drawings 1, 2a**].

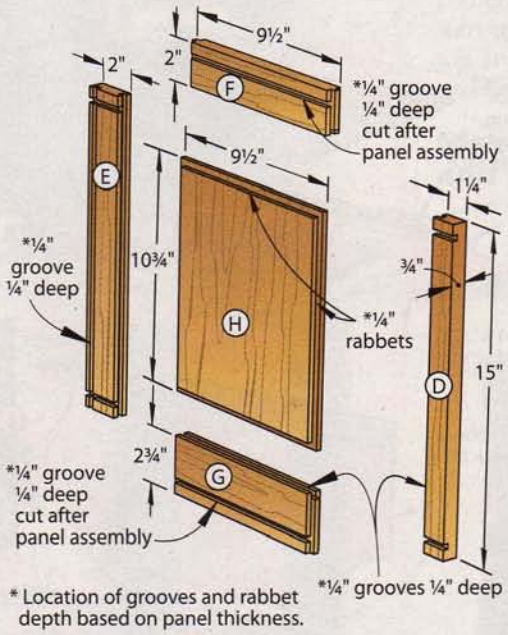
6 Dry-fit the side top rails (F), bottom rails (G), and panels (H). Crosscut the front and back stiles (D, E) to match the height of the F/G/H assembly. Do the same with the door rails (J) and panel (K) to determine the door stile (I) length, and cut them.

7 Sand all parts to 220 grit; then glue up the side assemblies (D–H) and the door (I/J/K). The door will be cut to final size later.

Complete the case joinery

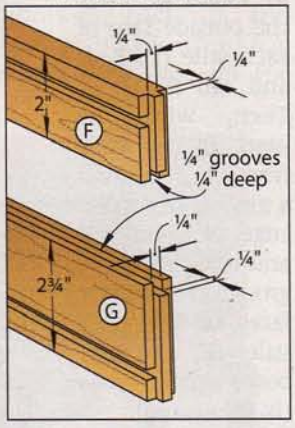
1 Set up the tablesaw as shown in **Photo D.** Then cut the grooves across the tops and bottoms of the side assemblies (D–H) [**Drawings 1, 2**].

2 SIDE ASSEMBLY



* Location of grooves and rabbet depth based on panel thickness.

2a SIDE PANEL TENON DETAILS

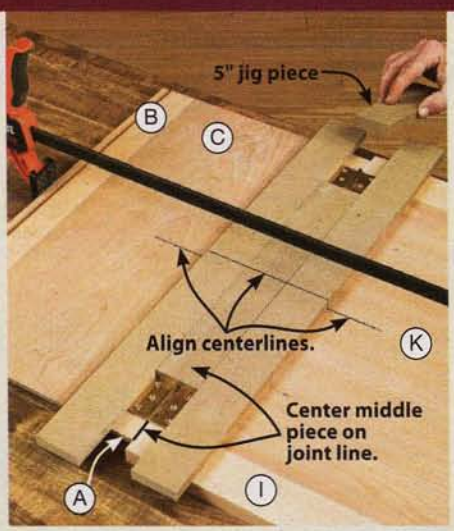


SHOP TIP

Jig guarantees perfect-fitting hinge mortises

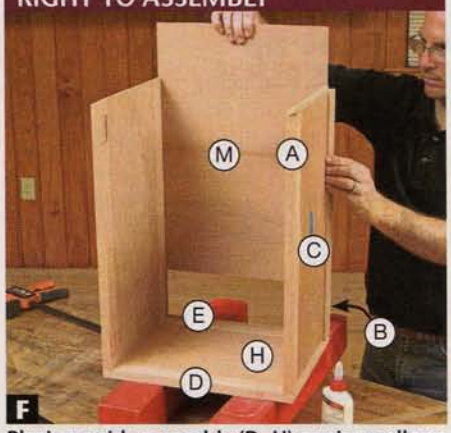
With a few pieces of plywood or MDF and a dado-cleaning bit [*right* photo], you can rout mortises that fit hinges like a hand in a glove.

Start by cutting two 2×24" strips of the plywood or MDF. Then cut a 14"-long strip and two 5"-long pieces the same width as an opened hinge. Across the three longest pieces, draw lines centered on their lengths. Center the width of the 14" piece on the joint line between the door (I/J/K) and bottom assembly (A/B/C), and align the centerline with centerlines on the two assemblies [*left* photo]. Add the two longest jig pieces, aligning the centerlines, and secure these three jig parts with double-faced tape. Nest the hinges next to the jig, tape the short jig pieces in place next to the hinges, then remove the hinges.



Rout recesses the depth of a hinge leaf with a dado-cleaning bit, then square up the corners [*above* photo].

RIGHT TO ASSEMBLY

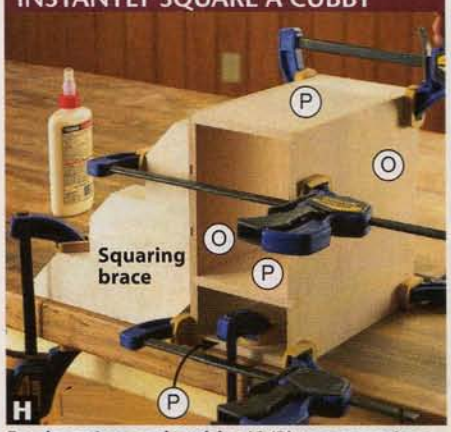


Placing a side assembly (D–H) on risers allows room for clamp heads. Identical diagonal measurements mean the case is square.

WORKING ON THE CHAIN, GANG

Secure the chain to the door stile (I), then use a scrap cut at 45° to locate the other end of the chain on the side of the front stile (D).

INSTANTLY SQUARE A CUBBY



By clamping each cubby (O/P) to a squaring brace clamped to your bench, the assembly stays square during glue-up.

2 Stand a side assembly (D–H) next to the dado blade and reset the blade height to the lowest side of the groove you just cut. Attach an auxiliary face to the rip fence and adjust the fence to cut a ¼"-wide rabbet. Cut a piece of scrap to fill the space below the top/bottom panel (C) [**Photo E**]; then cut a rabbet across each end of the top and bottom assemblies (A/B/C) [**Drawing 1**].

3 Dry-fit the top and bottom assemblies (A/B/C) with the two side assemblies (D–H). Measure between the grooves in the top and bottom assemblies and the side assemblies, and cut the case back (M) to these dimensions. Cut ¼" rabbets on the back face of the back to create tongues that fit in the grooves [**Drawing 1**].

4 With the case still dry-fit, measure for the final door dimensions. Take the distance from the top of the bottom panel to the top of the case and subtract 1/16" to find the door height. The width of the door equals the width of the case. ***Quick Tip! A little off the top and sides.*** Prevent the door from looking lopsided by trimming each door stile (I) and rail (J) equally.

5 Rout the hinge mortises [**Drawing 1a, Shop Tip,** *opposite*]. Then, drill and file the slots in the top-panel back (B) for fastening the case top (N) later [**Drawing 1b**].

6 Cut a ¾×1×6" blank for the door pull (L). Spray-adhere the **Door Pull Side Pattern** from the *WOOD Patterns*® insert to the side and cut the profile on a scrollsaw or bandsaw. Then apply the **Door Pull Top Pattern** and cut that profile. Sand the pull to round the edges and smooth out the profile; then cut the pull to length. Drill a hole for the pull, and screw it in place [**Drawing 1**].

It starts to come together

1 Assemble the case by gluing the top and bottom assemblies (A/B/C) to a side assembly (D–H) [**Photo F**]. Then slide in the back panel (M) before gluing and clamping the remaining side assembly.

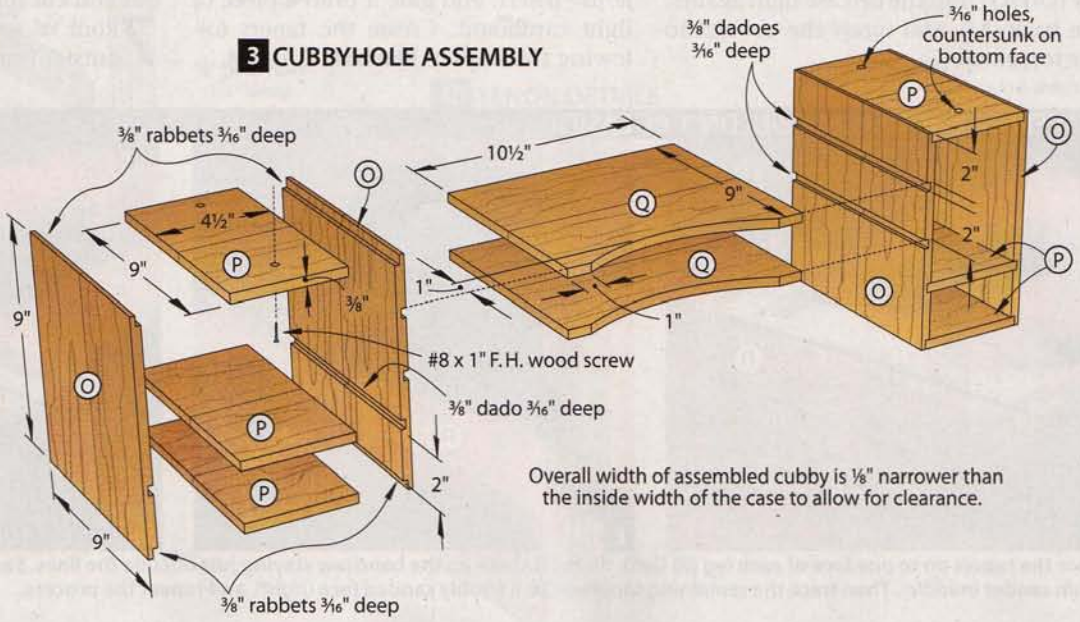
2 After the glue dries, set the case and door on your bench, aligning the hinge mortises. Drill pilot holes; then cut the hinge screws down before screwing the hinges in place [**Shop Tip**, *page 36*]. Attach the chain supports [**Photo G**], and drill holes in the front stiles (D) for the magnetic catches, but don't install them yet [**Drawing 1**]. Using a ½" brad-point or Forstner bit, drill a 1/16"-deep hole in each door stile (I) for the strikes and screw them in place.

3 Edge-glue stock for the case top (N) and cut the panel to size [**Drawing 1**]. Tilt your tablesaw blade to 34° and bevel the underside [**Drawing 1c**]. (Watch a free video of using a saddle jig for this job at woodmagazine.com/saddlejig.) Sand the case top to 220 grit; then screw the top to the carcase with a 1½" overhang on the back and sides.

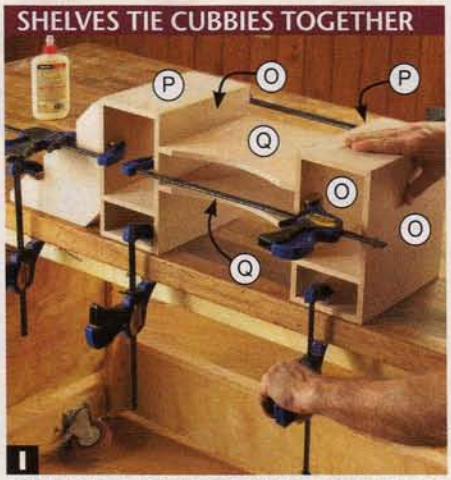
Bear down on the cubbies

1 To get a grain wrap around the two cubby compartments, cut all the pieces for each cubby from a longer blank. Prepare two ⅜×9×36" blanks for the cubby sides (O) and side shelves (P) and one ⅜×9×24" blank for the center shelves (Q). Sand the blanks to 180 grit,

3 CUBBYHOLE ASSEMBLY



Overall width of assembled cubby is ⅛" narrower than the inside width of the case to allow for clearance.



After gluing and clamping the center shelves (Q) between the cubbies (O/P), clamp the cubbies to the bench to keep things square.

Align the mark for the end of the mortise with the mark for the edge of the bit, then lower the leg (R) and push it to the stopblock.

then set the center-shelf blank aside. Cut the sides and side shelves to finished length from the other two blanks.

2 Using a dado blade that matches the thickness of the shelves (P, Q), cut 3/16"-deep dadoes and rabbets on the cubby sides (O) [**Drawing 3**]. Finish-sand the cubby sides and side shelves to 220 grit; then assemble the cubby boxes [**Photo H**].

3 Slide the cubbies (O/P) into the carcase snug to the sides. Determine the center-shelf (Q) length by measuring between the bottoms of the dadoes, and subtracting 1/8" for clearance. Cut the shelves to this length; then lay out and cut the arcs [**Drawing 3**]. After sanding the shelves to 220 grit, glue the shelves between the cubbies [**Photo I**].

4 Drill and countersink two 3/16" holes in the top side shelves (P) [**Drawing 3**]. Remove the screws from the top of the chain supports, fit the cubby assembly (O/P/Q) into the carcase tight against the back (M), and screw the cubbies to the top panel (C).

Your case is baseless

1 From 8/4 stock (or laminated 3/4" stock), cut the legs (R) to size. To keep the legs properly oriented, mark each with its location (right rear, left front, etc.); then lay out the three mortise locations [**Drawings 4, 4a**]. To help locate the mortises when routing, transfer the marks for the top end of each top mortise and the bottom end of each bottom mortise to the opposite faces of the legs.

2 Using a 1/4" straight bit in your router table, make test cuts in 1½"-wide scrap to center the cut on the stock's width. Clamp a stopblock to the fence, 3" from the bit [**Photo J**]. Rout the upper mortises in the legs (R) in three passes, raising the bit 1/4" between passes. Then reset the stopblock 7" from the bit, lower the bit, and rout the lower mortises.

3 Scribe a line around each leg (R) 5" from the bottom. Make a copy of the **Leg Bottom Pattern** from the *WOOD Patterns®* insert, and glue it onto a piece of light cardboard. Create the tapers following the steps in **Photos K, L,** and **M**.

SHOP TIP

Clip the tip

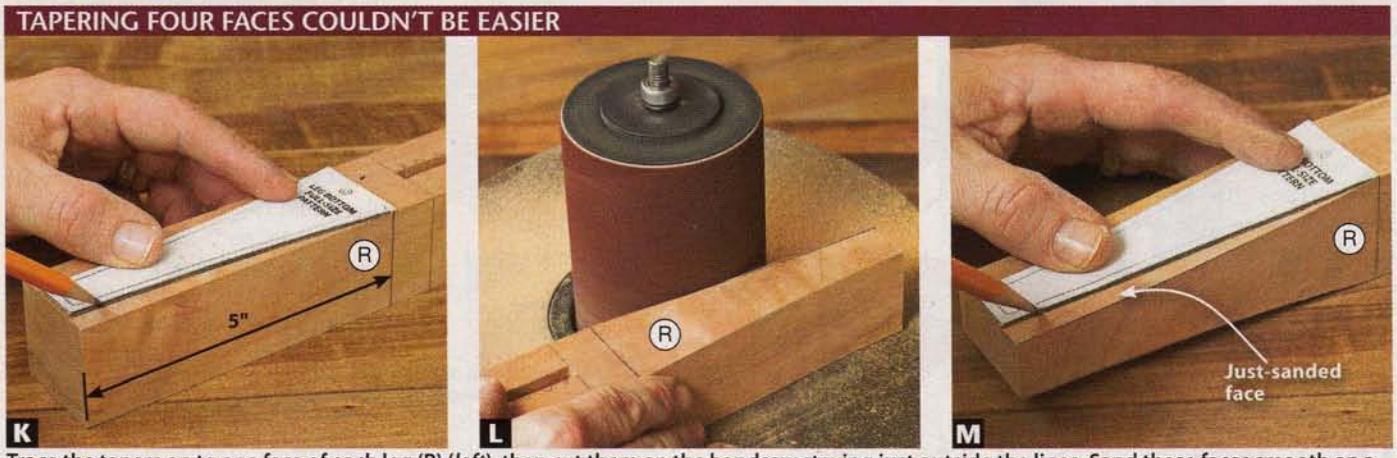
The screws that came with our hinges were long enough to poke through the front of the door or at least raise a dimple [*right* in photo]. To head off any potential damage, we snipped the screws with bullnose pliers before driving them [*left* in photo]. We did the same with the screws for the chain supports.

4 Cut the front and back rails (S), upper side rails (T), and lower side rails (U) to size, along with a test piece of the same width and thickness as the upper rails. Cut on the scrap a test tenon to fit in a mortise [**Photo N**]. Then cut a tenon on each end of each rail [**Drawing 4b**].

5 Using a fairing stick (see **More Resources,** *page 38*), lay out the arcs on the upper rails (S, T) [**Drawing 4**]. Cut them on the bandsaw, and sand them smooth.

6 For the stretcher (V), cut an overlong blank to width. Dry-fit the legs (R) and rails (S, T, U), and square up the assembly. Mark the stretcher length [**Photo O**], and cut it to length, then lay out and cut the arc to shape [**Drawing 4**].

7 Rout 1/8" round-overs on the arc and outside top edge of the rails (S, T)



Trace the tapers on to one face of each leg (R) (*left*), then cut them on the bandsaw staying just outside the lines. Sand these faces smooth on a drum sander (*middle*). Then trace the remaining tapers on to a freshly sanded face (*right*), and repeat the process.

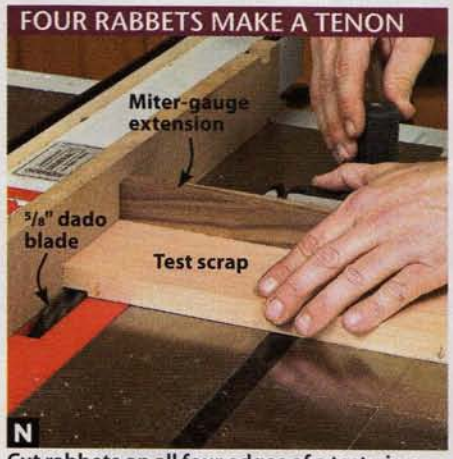
and stretcher (V), the long edges of the lower side rails (U), and the long edges and the top outside edges of the legs (R) [**Drawing 4**].

Note: *The router bit won't reach the corners of the leg tapers. Use sandpaper to create these round-overs.*

8 Cut a groove in the front/back rails (S) to accept the tabletop fasteners [**Drawing 4**]. Sand all the base parts to 220 grit; then glue up the base.

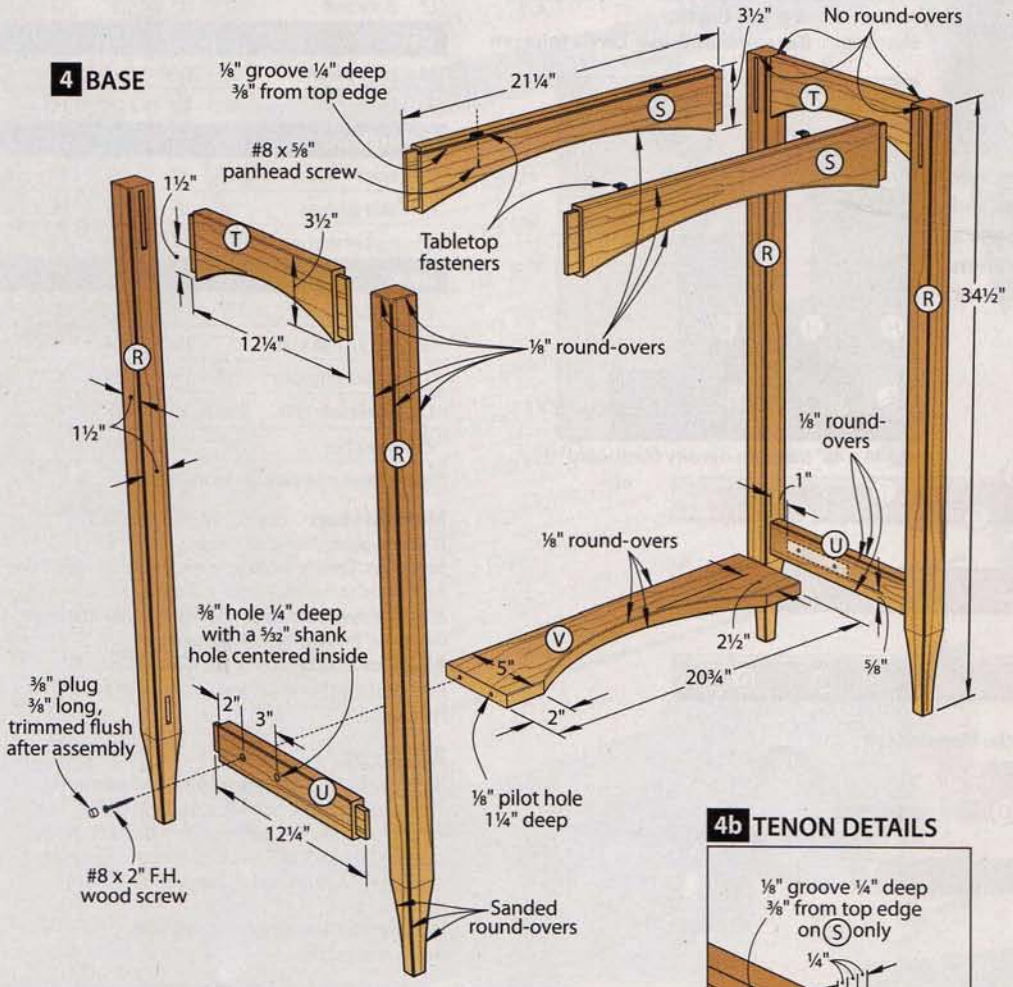
Note: *Do not glue the stretcher (V) in place. Clamp it in position only as a spacer while the glue dries on the rails and legs.*

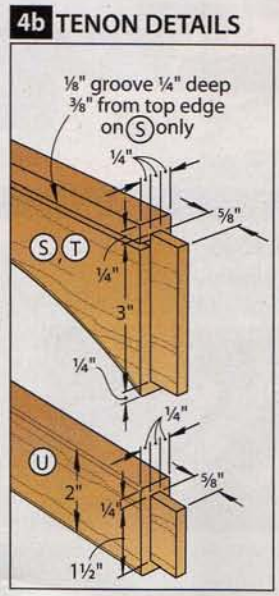
9 Using double-faced tape, fasten scrap spacers to the lower side rails (U) to

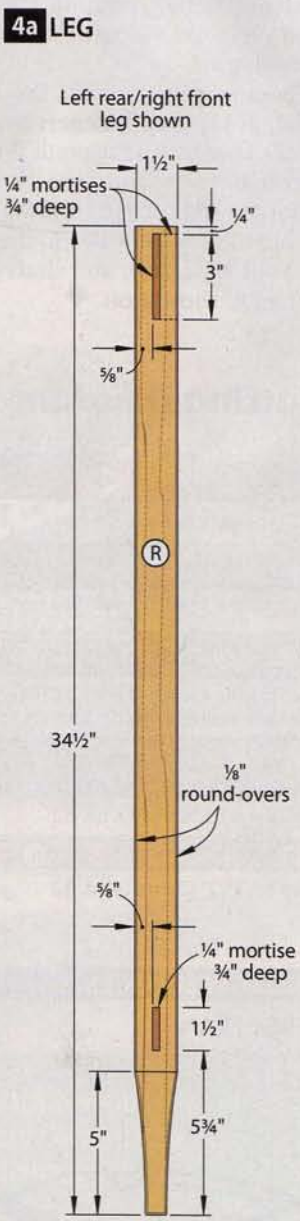


Cut rabbets on all four edges of a test piece to create a tenon that fits the mortise; then cut tenons on the rails (S, T, U).

Place one end of the stretcher (V) blank against the inside face of an upper side rail (T) and mark the length of the stretcher.







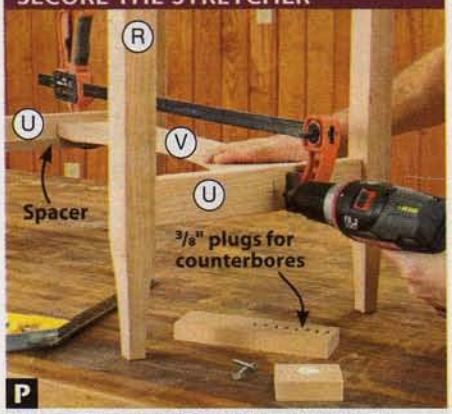
position the stretcher (V) ⅝" above the bottom of the rails [**Drawing 4, Photo P**]. Clamp across the rails (U) and drill counterbores with shank and pilot holes [**Drawing 4**]. Screw the stretcher in place and glue plugs into the counterbores. Trim and sand the plugs flush after the glue dries.

Finish and assemble

1 Remove the hardware, pull (L), case top (N), and cubbies (O/P/Q). Apply a finish to all pieces. (We wiped on boiled linseed oil and allowed it to dry 72 hours before applying two coats of a satin-finish wipe-on polyurethane, buffing lightly between coats with 320-grit sandpaper.) After the finish cures, reinstall the cubbies, top, pull, and hardware, and press the magnetic catches in place [**Drawing 1**].

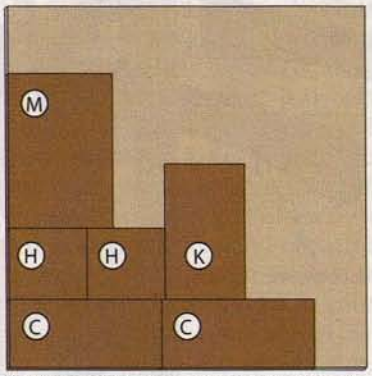
2 Center the case on the base. Slide four tabletop fasteners into the kerfs in the base front/back rails (S) and screw through them into the bottom-panel front (A) and back (B) [**Drawing 4**]. Take a photo of your handiwork, then sit down at your new desk and draft a letter or e-mail to show it off.

SECURE THE STRETCHER



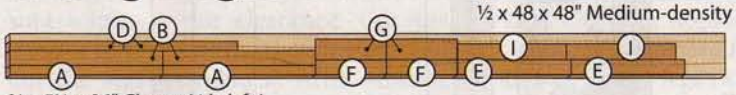
Temporary spacers hold the stretcher (V) while drilling counterbores and screw holes. Plug the counterbores after driving screws.

Written by **Craig Ruegsegger** with **Jeff Mertz**
Project design: **Kevin Boyle**
Illustrations: **Roxanne LeMoine; Lorna Johnson**

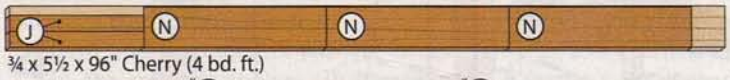


½ x 48 x 48" Medium-density fiberboard

Cutting Diagram

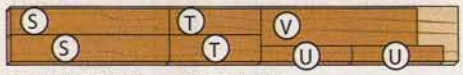


¾ x 5½ x 96" Cherry (4 bd. ft.)



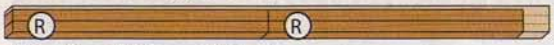
¾ x 5½ x 96" Cherry (4 bd. ft.)

¾ x 5½ x 96" Cherry (4 bd. ft.) (2 needed)
*Plane or resaw to the thicknesses listed in the Materials List.



¾ x 7¼ x 60" Cherry (3.3 bd. ft.)

¾ x 1½ x 12" Walnut (.17 bd. ft.)



1½ x 3½ x 72" Cherry (4 bd. ft.)

Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
Top/bottom panels						
A	fronts	¾"	1¼"	20½"	C	2
B	backs	¾"	2"	20½"	C	2
C	panels	½"	9"	20½"	VM	2
Side panels						
D*	front stiles	¾"	1¼"	15"	C	2
E*	back stiles	¾"	2"	15"	C	2
F	top rails	¾"	2"	9½"	C	2
G	bottom rails	¾"	2¾"	9½"	C	2
H	panels	½"	9½"	10¾"	VM	2
Door						
I*	stiles	¾"	2"	14³⁄₁₆"	C	2
J*	rails	¾"	2"	18"	C	2
K	panel	½"	18"	10¹¹⁄₁₆"	VM	1
L*	door pull	⅝"	1"	1¼"	W	1
Case						
M	back panel	½"	20½"	14"	VM	1
N	top	¾"	16"	24½"	EC	1
Cubbyhole						
O*	sides	⅜"	9"	9"	EC	4
P*	side shelves	⅜"	9"	4½"	EC	6
Q*	center shelves	⅜"	9"	10½"	EC	2
Base						
R	legs	1½"	1½"	34½"	C	4
S	front/back rails	¾"	3½"	21¼"	C	2
T	upper side rails	¾"	3½"	12¼"	C	2
U	lower side rails	¾"	2"	12¼"	C	2
V*	stretcher	¾"	5"	20¾"	C	1

*Parts initially cut oversize. See the instructions.

Materials key: C–cherry, VM–veneered MDF, EC–edge-glued cherry, W–walnut.
Supplies: Double-faced tape, spray adhesive, #8×2" flathead wood screws (4), #8×1¼" flathead wood screws (4), #8×1" flathead wood screws (4), #8×⅝" panhead screws (4), #8×1¼" brass flathead wood screw (1).
Blade and bits: Dado blade, ⅛" round-over, ¼" straight, dado-cleaning router bits, ½" brad-point or Forstner bit.

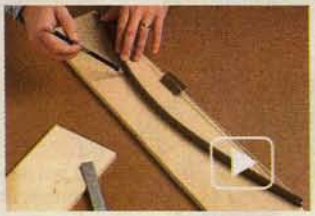
Sources

Hinge, chain, catches, tabletop fasteners: 2x2" brass hinges (2) item 57116, $17.99 [pair]; 5⁄16" magnetic catches with strikes (2) item 29272, $6.29; chain supports (2) item 30663, $12.99; tabletop fasteners (4) item 34215, $3.99 [pack of 8], Rockler, 800-279-4441, rockler.com.
Veneer: B&B Rare Woods, 303-986-2585, wood-veneers.com.

MORE RESOURCES

FREE PLAN
- Making a fairing stick at woodmagazine.com/fairing

FREE VIDEOS
- "Using a Fairing Stick" at woodmagazine.com/fairingvideo



- "Using a Saddle Jig" at woodmagazine.com/saddlejig

- "Clamp and Sand Panels Flat" at woodmagazine.com/panels

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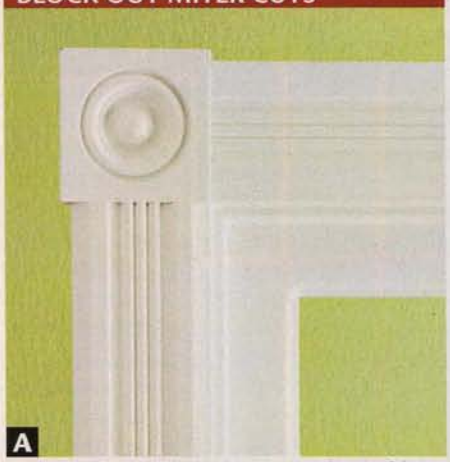
But let's not stop there. In the next issue, your molding makeover continues with detailed tips on how to make and install baseboards and chair rails. You can make all these moldings using a tablesaw and a table-mounted router. Though not mandatory, a mitersaw, a 15- or 16-gauge pneumatic nailer, and an 18-gauge brad nailer make installation go faster and easier.

When replacing the molding in your home, start with door and window trim—they determine the lengths of baseboards and chair rails you'll install later.

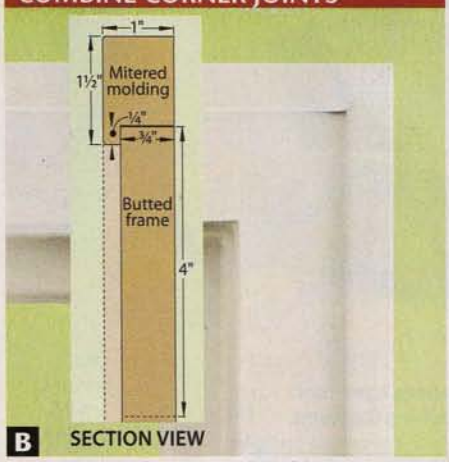
BLOCK OUT MITER CUTS



A

Corner blocks hide end grain on the molding and eliminate miter cuts and the need to make stopped cuts to form flutes or beads.

COMBINE CORNER JOINTS



B SECTION VIEW

By encasing a butt-joined molding in narrow, mitered moldings, you conceal end grain without cutting wide, obvious miters.

WIDEN MOLDINGS, NOT PROFILES

C

Routing molding blanks wider than the bit length produces a bolder profile appropriate for rooms with ceilings over 8' high.

Select profiles that suit your taste. Your choice of materials depends on whether you'll stain or paint the molding. For stained molding, use clear stock. If you'll paint the molding, substitute inexpensive poplar or MDF.

Next, decide between butted corners or miter joints. Casings butted against corner blocks [**Photo A**] mean every cut is 90°, but miters [**Photo B**] don't add that much more complexity. The technique we'll show doesn't use corner blocks, but still requires no mitering.

Now choose a symmetrical profile (with no left or right side) [**Photo A**] or an asymmetrical profile [**Photo C**]. Most new homes use asymmetrical mitered trim only 2¼" wide—about ½" thick at the outside edge and tapered toward the inside. For a bolder asymmetrical profile, rout only a portion of the molding's width [**Photo C**].

Mill miles of molding

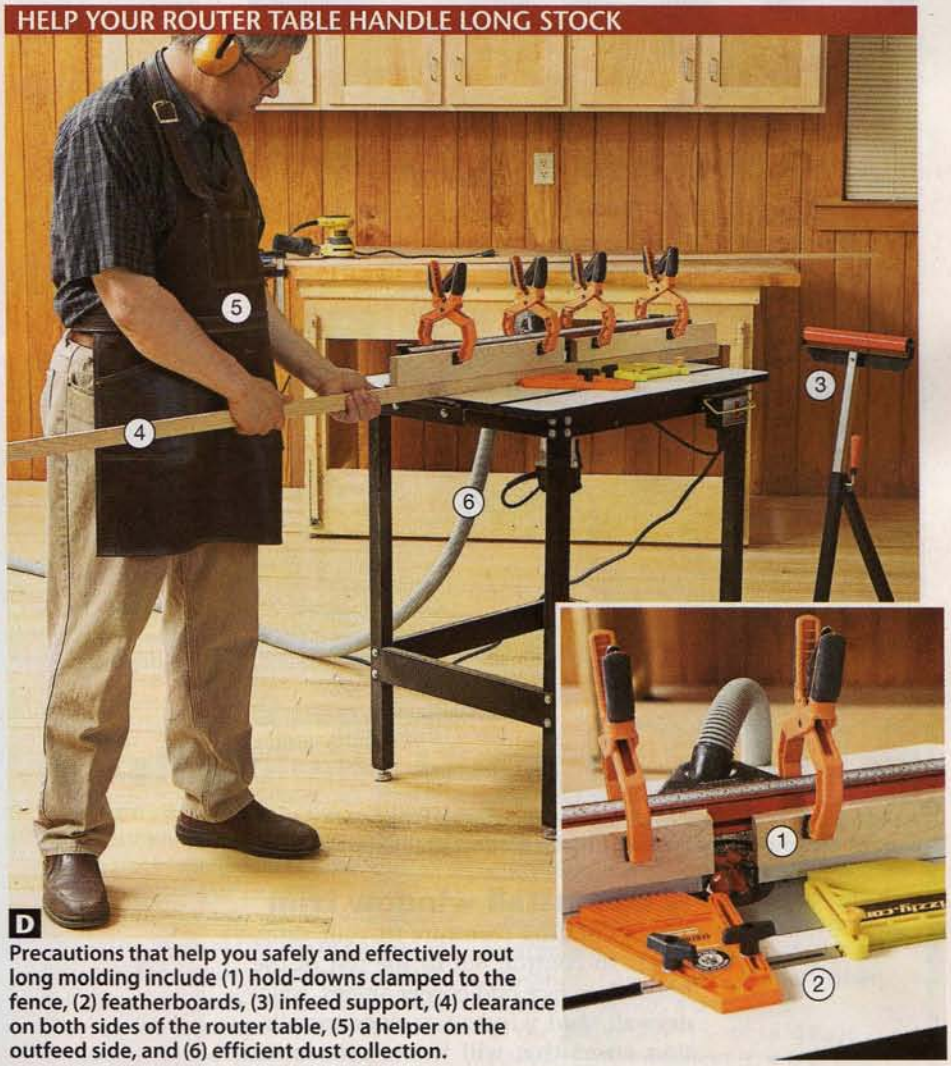
Plan your work around lumber up to 8' long to eliminate joints. Plane molding blanks to uniform thickness, including two extras in case you lose a few to warping or router tear-out.

Spinning a large-profile router bit through long hardwood strips requires a table-mounted router with a variable-speed 3-hp motor. You'll also need infeed and outfeed supports. For consistent profiles, mount featherboards and hold-downs to keep workpieces from being levered away from the bit by their lengths and weights [**Photo D**].

Having a helper pull the molding on the outfeed side speeds up production, but the featherboards and hold-downs let you work alone as long as you keep up a consistent feed rate. After routing, set the pieces aside for a day and check for wood movement. Discard twisted or warped pieces.

A sharp bit reduces but doesn't eliminate tool marks that stains reveal [**Photo E**]. (The same applies to store-bought moldings.) Use a sanding sponge or profile blocks (see **Sources**) to sand the different areas of the profile. Start with the highest grit that eliminates the router marks—typically 100 grit or 120 grit—and sand up through 180 grit. To avoid touching up the finish on splices, joints, and nail holes after installation, stain but don't topcoat your moldings.

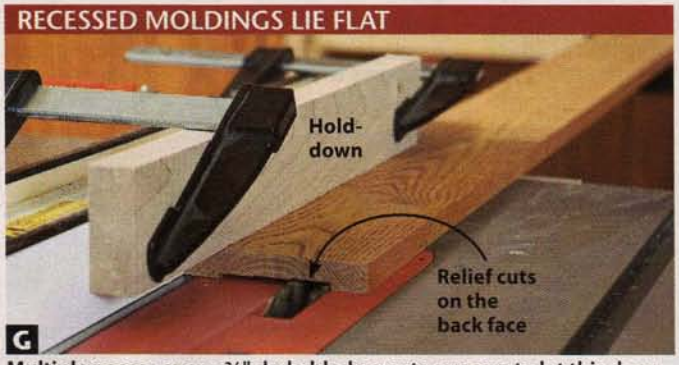
HELP YOUR ROUTER TABLE HANDLE LONG STOCK



D

Precautions that help you safely and effectively rout long molding include (1) hold-downs clamped to the fence, (2) featherboards, (3) infeed support, (4) clearance on both sides of the router table, (5) a helper on the outfeed side, and (6) efficient dust collection.

Both store-bought trim and one-pass routed moldings have tool marks (top) that must be sanded down prior to staining (bottom).



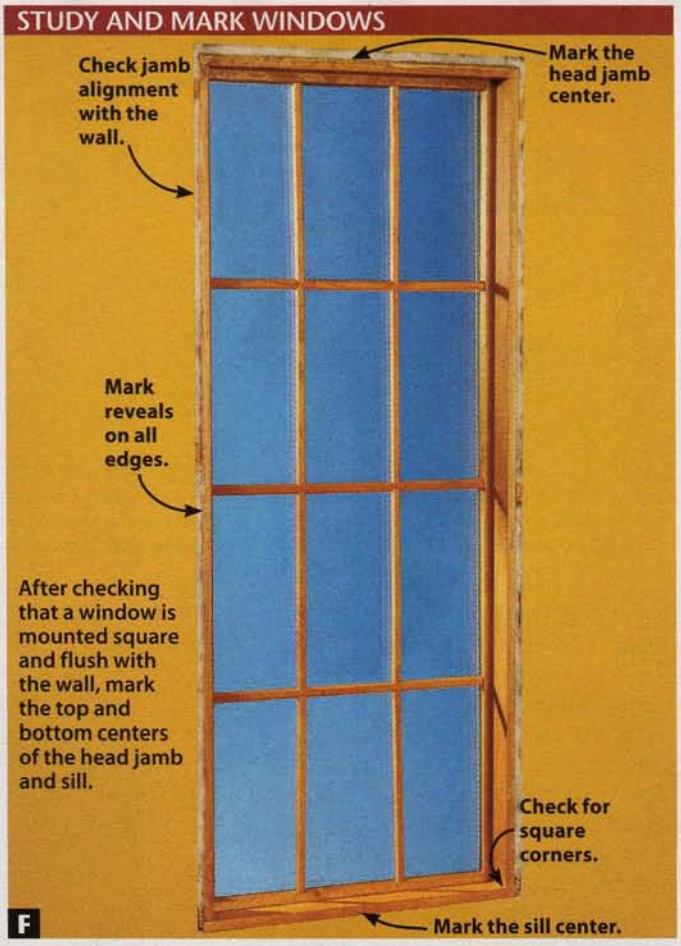
Multiple passes over a ¾" dado blade create a recess to let this door molding compensate for wall imperfections.

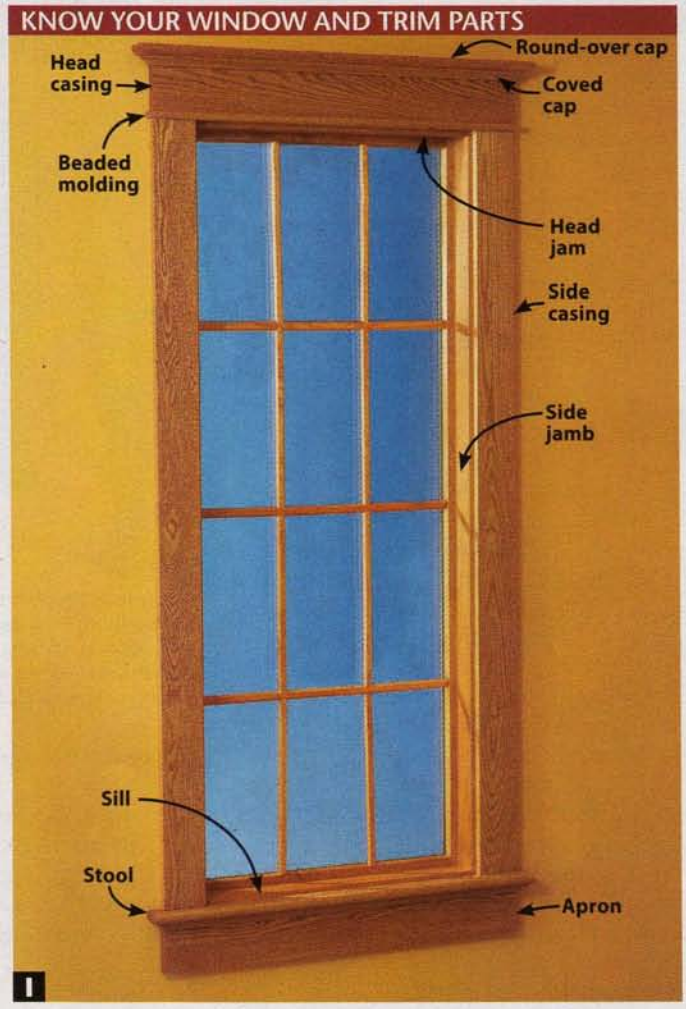
A sliding square with a 3"-wide blade (see Sources) helps mark reveal lines where you'll attach molding to the window jambs and sill.

Make, install window trim

When building furniture in your shop, you're in control. But in the rest of the house, you face odd corner angles, wavy drywall, and window or door installation errors that will throw off careful measurements and equipment settings.

Evaluate each window and door before cutting and attaching trim [**Photo F**]. If a jamb stands proud of the drywall, sand or plane it flush with the wall. If the drywall stands proud of the jambs, cut and attach filler strips where the gap exceeds ⅛". You also can help moldings


STUDY AND MARK WINDOWS
Check jamb alignment with the wall.
Mark the head jamb center.
Mark reveals on all edges.
After checking that a window is mounted square and flush with the wall, mark the top and bottom centers of the head jamb and sill.
Check for square corners.
Mark the sill center.
F



lie flat against a wall and jamb by relieving the molding back ⅛–3/16" using a dado blade [**Photo G**].

Now determine how much of the door and window jambs to reveal. We marked ours at ⅜" [**Photo H**], but you may want to make the reveal as small as ⅛" to provide more backing for driving nails into the jambs.

For the room shown on *page 44*, we'll build similar header assemblies over the window and door. Make the stool/apron assembly on the bottom of the window the same as a header assembly minus the beaded molding on the bottom [**Photo I**]. Here's how to determine the header and stool/apron assembly part lengths for windows and doors:

- To find the head casing and window apron length, measure between the side jambs of the door or window, then add two times the side-casing width (3½" in this case) plus two times the reveal (⅜"). Cut the head-casing length the total of those measurements.
- Add 2¾" to the head-casing length, and cut the round-over cap that length.
- Add 1½" to the head-casing length and cut the coved cap that length.
- Add ¾" to the head-casing length and cut the beaded molding that size.

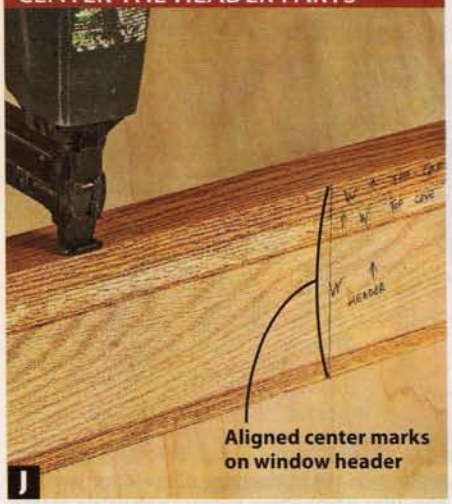
For a 36"-wide door or window, for example, cut the head casing/apron 43¾" long, the round-over cap 46½" long, the coved cap 45¼" long, and the beaded molding 44½" long. Then rout profiles on the cap parts and beaded molding [**Header Assembly drawing**].

Back in the shop, assemble the two caps, head casing, and beaded molding to make the door and window headers. Do the same, minus a beaded molding, for the stool/apron assembly. Center a mark on the back of each part, align the marks and nail the parts together [**Photo J**]. Then mark the centers of the window head jambs and sills, and the head jambs of the doors.

To mount the stool and apron assembly, align the center marks on the stool with the center mark on the windowsill edge. Then use a 16-gauge (or 15-gauge) nailer to attach the assembly to the wall [**Photo K**] along the reveal line.

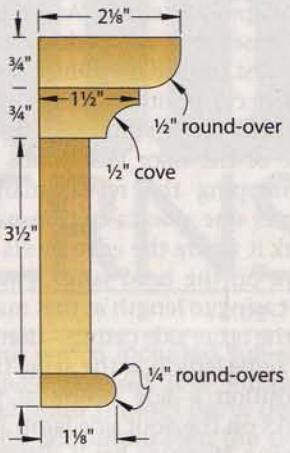
Butt one side-casing end on the stool and mark the other end where it meets the window head-jamb reveal mark. Cut it to that length. Then attach it to the wall with 15- or 16-gauge nails and to the window-jamb edges with 18-gauge brads [**Photo L**]. Now install the header assembly, also centered on the window head-jamb edge.

CENTER THE HEADER PARTS



Assemble this window header by aligning the center marks and nailing the cap pieces and beaded molding to the head casing.

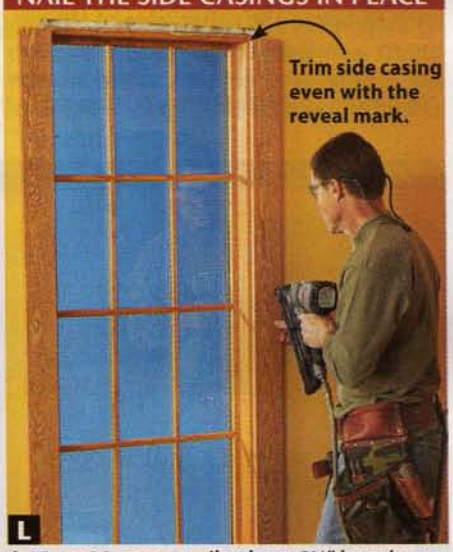
HEADER ASSEMBLY (END VIEW)



ATTACH THE STOOL AND APRON

Align the stool/apron assembly with the sill edge reveal marks, and attach the assembly to the wall with 15- or 16-gauge nails.

NAIL THE SIDE CASINGS IN PLACE



A 15- or 16-gauge nail at least 2¼" long has what it takes to penetrate ¾" hardwood, ½" drywall, and the stud underneath.

Install Molding Like a Pro

David Fish has learned a thing or two about installing molding during his 30+ years working as a builder and trim carpenter. For example:

- For an improperly installed window where the drywall stands more than ⅛" proud of the jamb, you may be able to pull the jambs flush using a bar clamp. With the window open, place the fixed clamp jaw on the outdoor edge of the window jamb and the movable jaw against the drywall inside next to the window. Slowly tighten the clamp until the window slips into position.
- When cutting side casings to length using a reveal mark on the door or window jambs, stand on a ladder or stool so your eyes are even with the reveal mark before marking your cutline on the casing edge.
- Fasten moldings to door and window jambs with 18-gauge brads spaced about 12" apart. Space 15- or 16-gauge nails about 24" apart when fastening trim to a wall.
- Use 2¼" or 2½" 15- or 16-gauge nails to fasten molding to a wall but never to a door or window. The added thickness could split the jambs.
- Don't try to save time by sawing side casings to equal length at the same time. Plinth blocks on an uneven floor could be an unequal distance from the head-jamb reveal marks.

Move on to the doors

Cutting and attaching door trim works much like the window trim, minus the stool/apron assembly. As a transition for the baseboard we'll add later, side casings rest instead on plinth blocks.

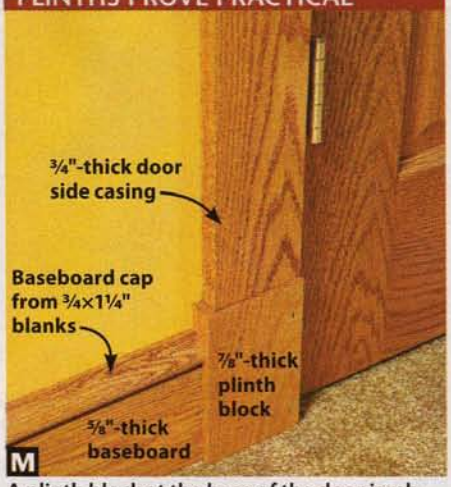
First cut plinth blocks ¼" wider than the side casings and nail them at the base of the door side jambs [**Photo M**], overlapping the reveal marks by ⅛". Center one side casing on a block and mark it where the edge meets the reveal mark on the head jamb [**Photo N**]. Cut the casing to length at that mark. Repeat for the other side casing—don't cut both the same length at the same time.

Position a side casing at the reveal marks on the door side jamb and mount it using 18-gauge brads driven into the door jambs. Then use a 15-gauge or 16-gauge nailer with 2¼"- or 2½"-long nails to fasten the other edge of the casing to a wall stud. Repeat for the other side casing. Now center the header trim assembly on the head jamb [**Photo O**] and nail it to wall studs using 15- or 16-gauge nails.

With all door and window trim installed, touch up any missing stain. Then dab oil-based wood putty that matches your wood (see **Sources**) into the nail holes [**Photo P**] and wipe smooth. Allow the putty to dry and brush on at least two coats of clear finish.

Written by **Bob Wilson** with **David Fish**
Molding design: **Kevin Boyle**
Illustrations: **Roxanne LeMoine**; **Lorna Johnson**

PLINTHS PROVE PRACTICAL

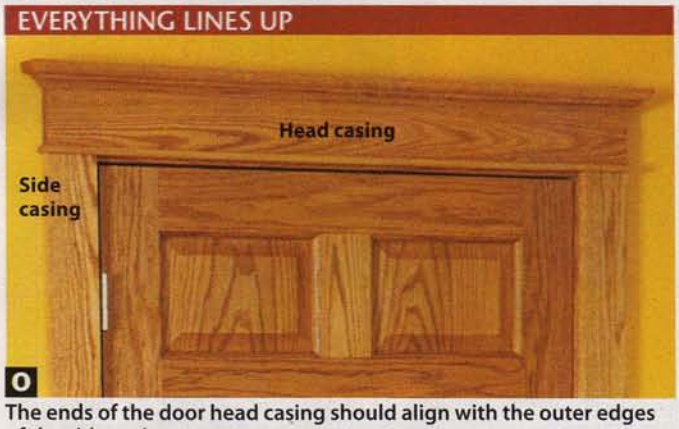


A plinth block at the base of the door jamb provides a transition between the side casing and baseboards.

GET EYE TO EYE WITH MARKS

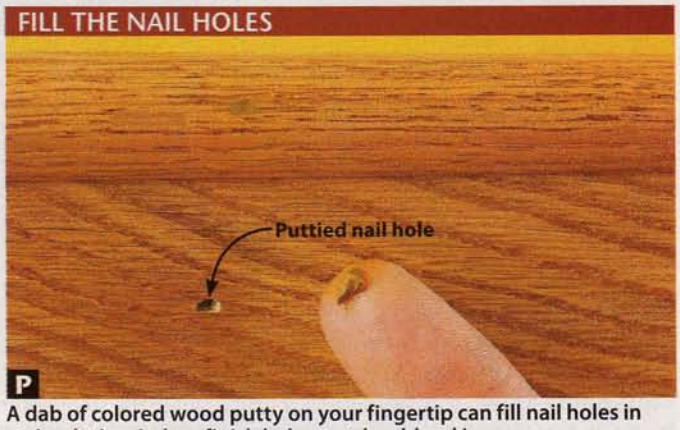
Transfer the reveal mark on the door head jamb edge to the edge of a door casing. Then trim the casing to that mark.

EVERYTHING LINES UP



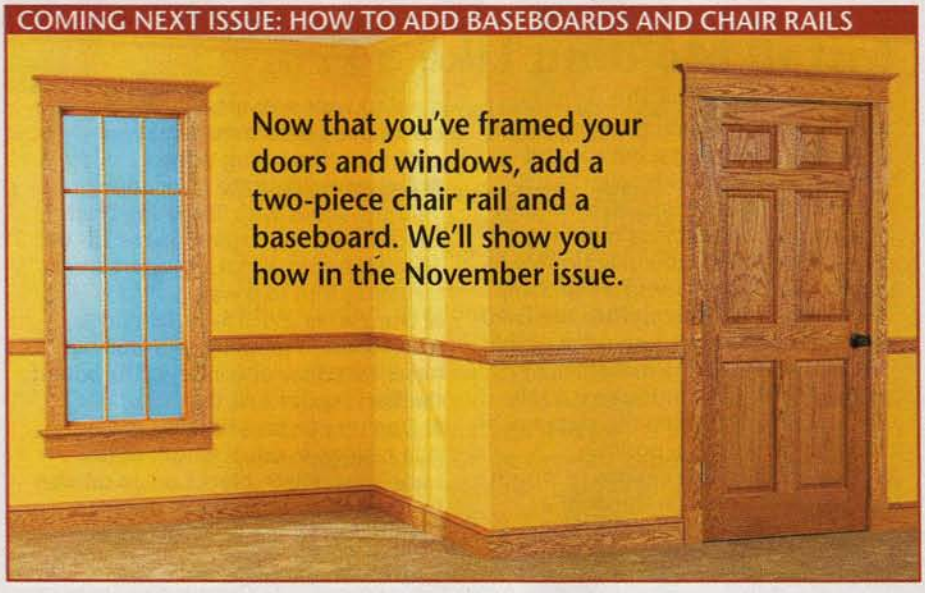
The ends of the door head casing should align with the outer edges of the side casings.

FILL THE NAIL HOLES



A dab of colored wood putty on your fingertip can fill nail holes in stained trim. A clear finish helps patches blend in.

COMING NEXT ISSUE: HOW TO ADD BASEBOARDS AND CHAIR RAILS


Now that you've framed your doors and windows, add a two-piece chair rail and a baseboard. We'll show you how in the November issue.

Sources

Router bits: Window casing bit no. 175-4805, $79.95, Eagle America, 800-872-2511 or eagleamerica.com. Base-cap bit no. 99-480, $59 (Amazon.com), Freud America, 800-334-4107 or freudtools.com.
Profile sanding blocks: Set of 15, no. 68Z82.10, $13.95, Lee Valley Tools, 800-871-8158 or leevalley.com.
Sliding square: No. 05N32.01, $36.50, Lee Valley Tools.
Tinted putty: Color Putty no. 116 Butternut, $2.67 for 3.68 oz, Color Putty Co., 608-325-6033 or colorputty.com.

MORE RESOURCES

- For a free video on cutting and installing crown molding, go to woodmagazine.com/moldingvideo.
- To buy an article on choosing a mitersaw, go to woodmagazine.com/12mitersaw.
- For nailer and compressor combo kit information and reviews, see woodmagazine.com/nailercombo.

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October 2009 *Issue 193*

Dear Reader: As a service to you, we've included full-size patterns on this insert for irregular-shaped and intricate project parts. You can machine all other project parts using the Materials List and the drawings accompanying the project you're building.

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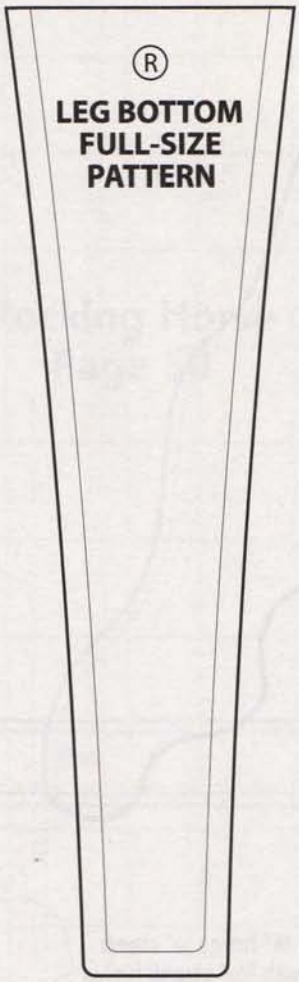
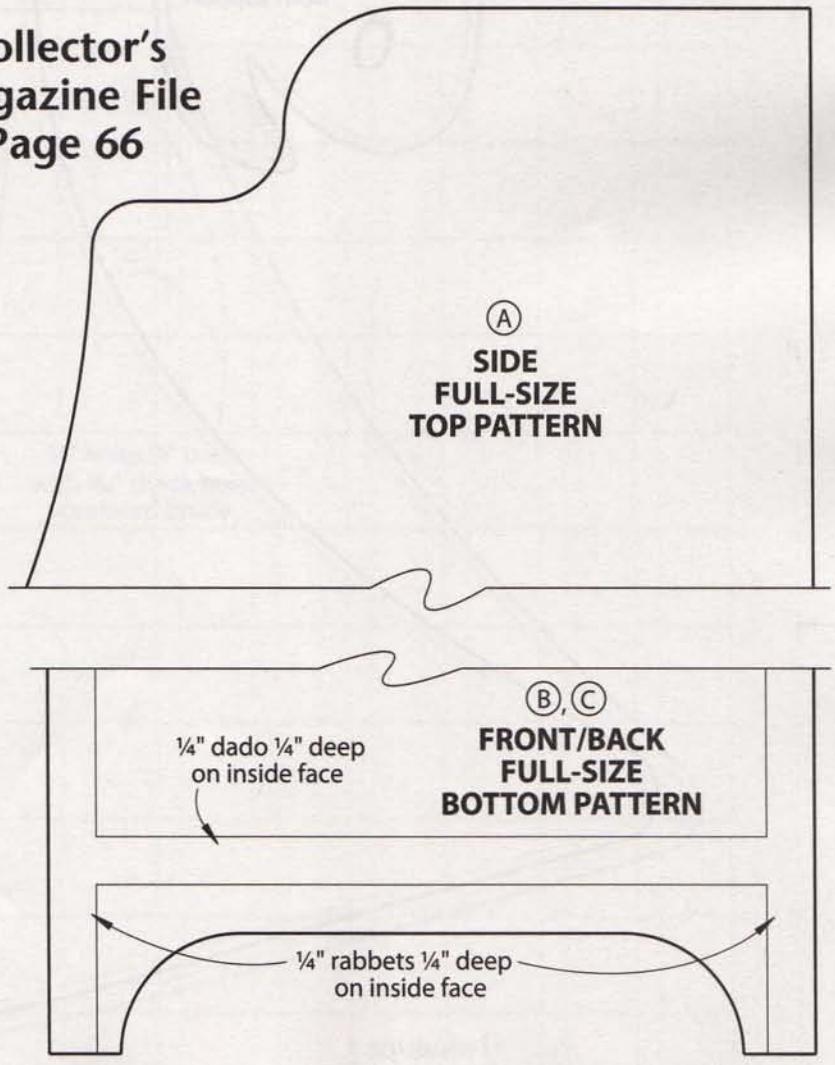
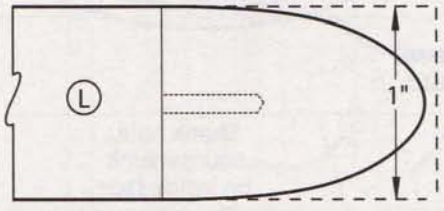


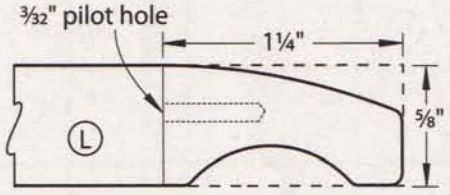
Collector's Magazine File Page 66



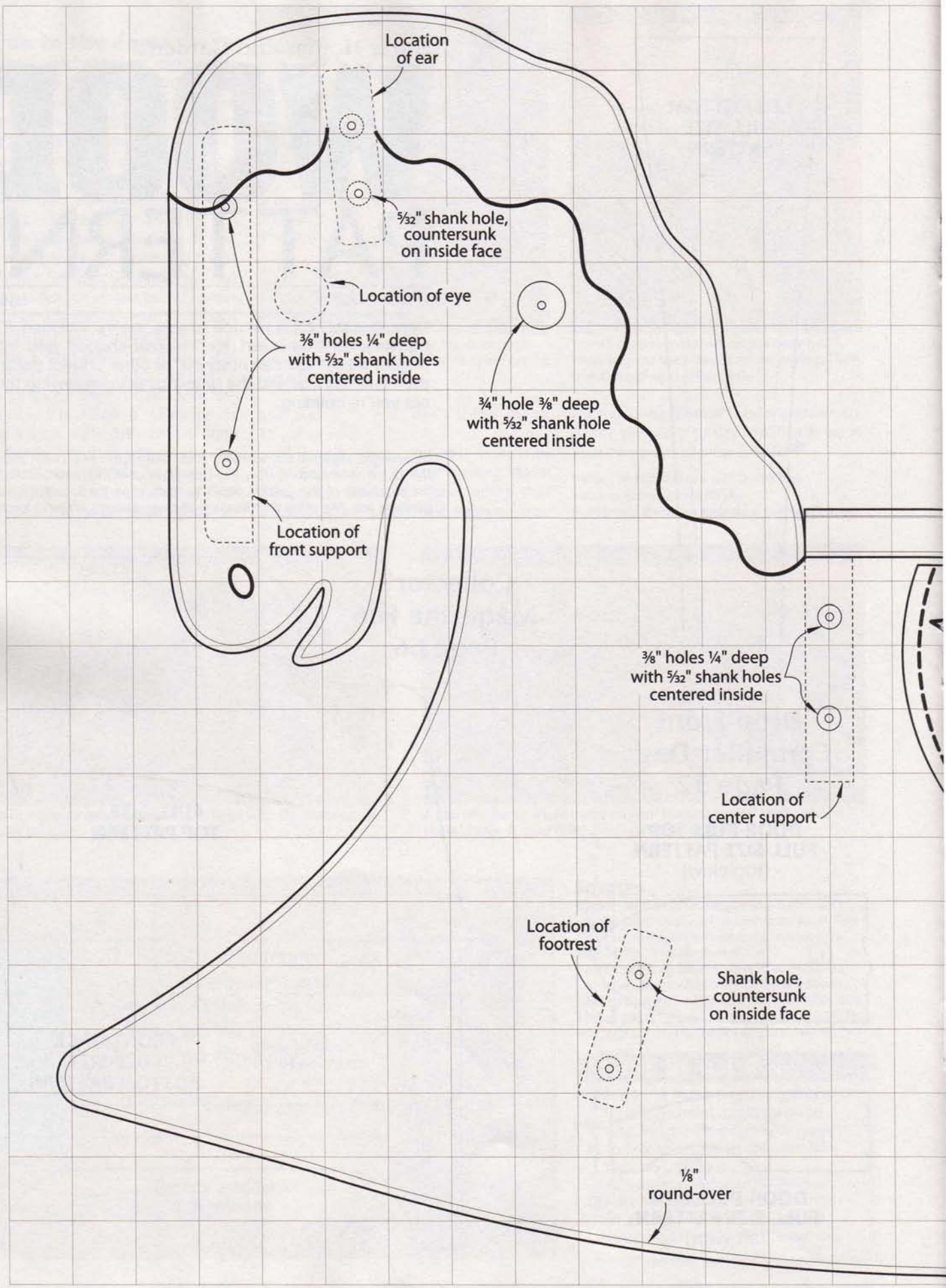
Drop-Front Computer Desk Page 32

DOOR-PULL TOP FULL-SIZE PATTERN
(top view)



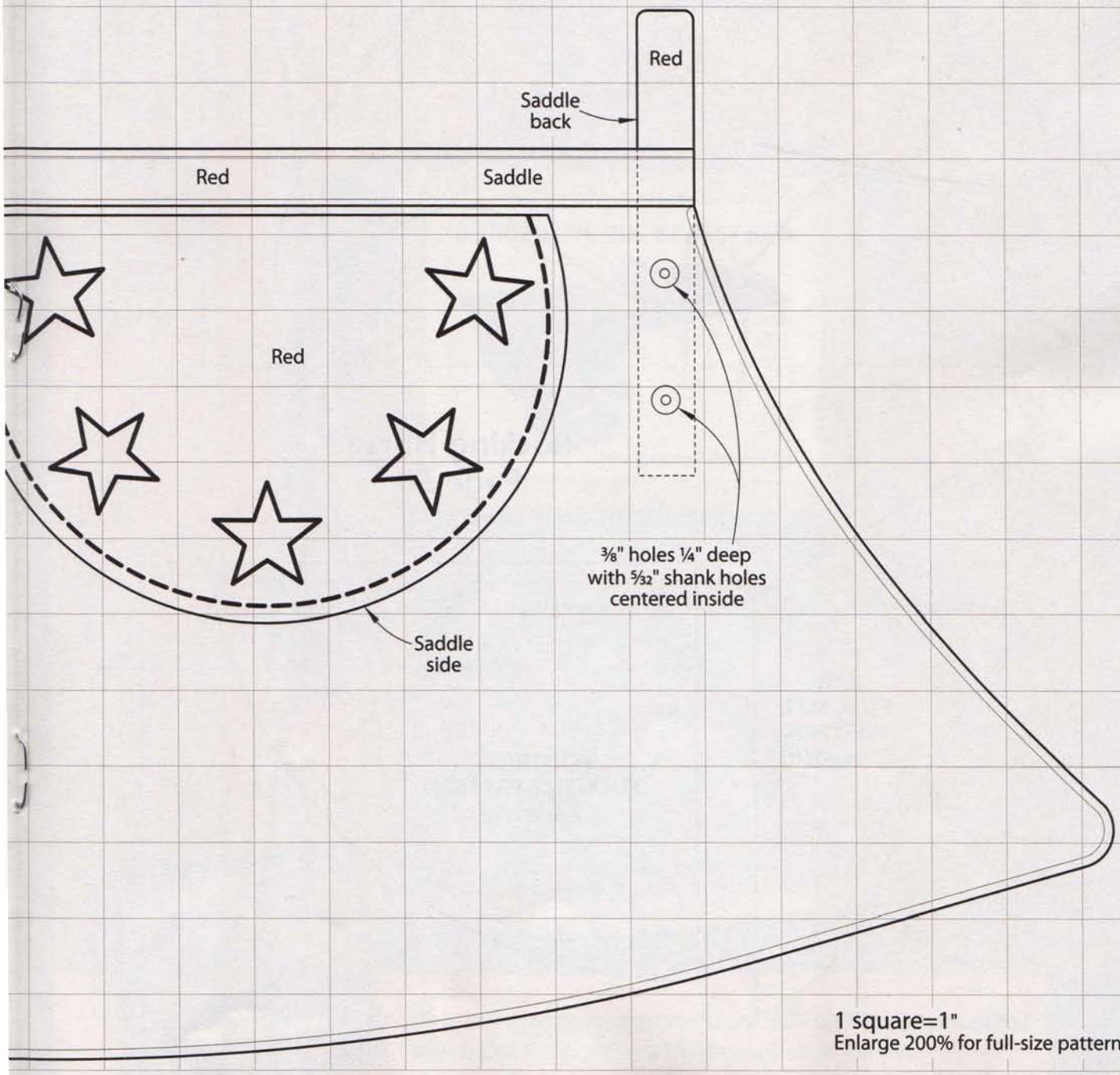


DOOR-PULL SIDE FULL-SIZE PATTERN
(left view)

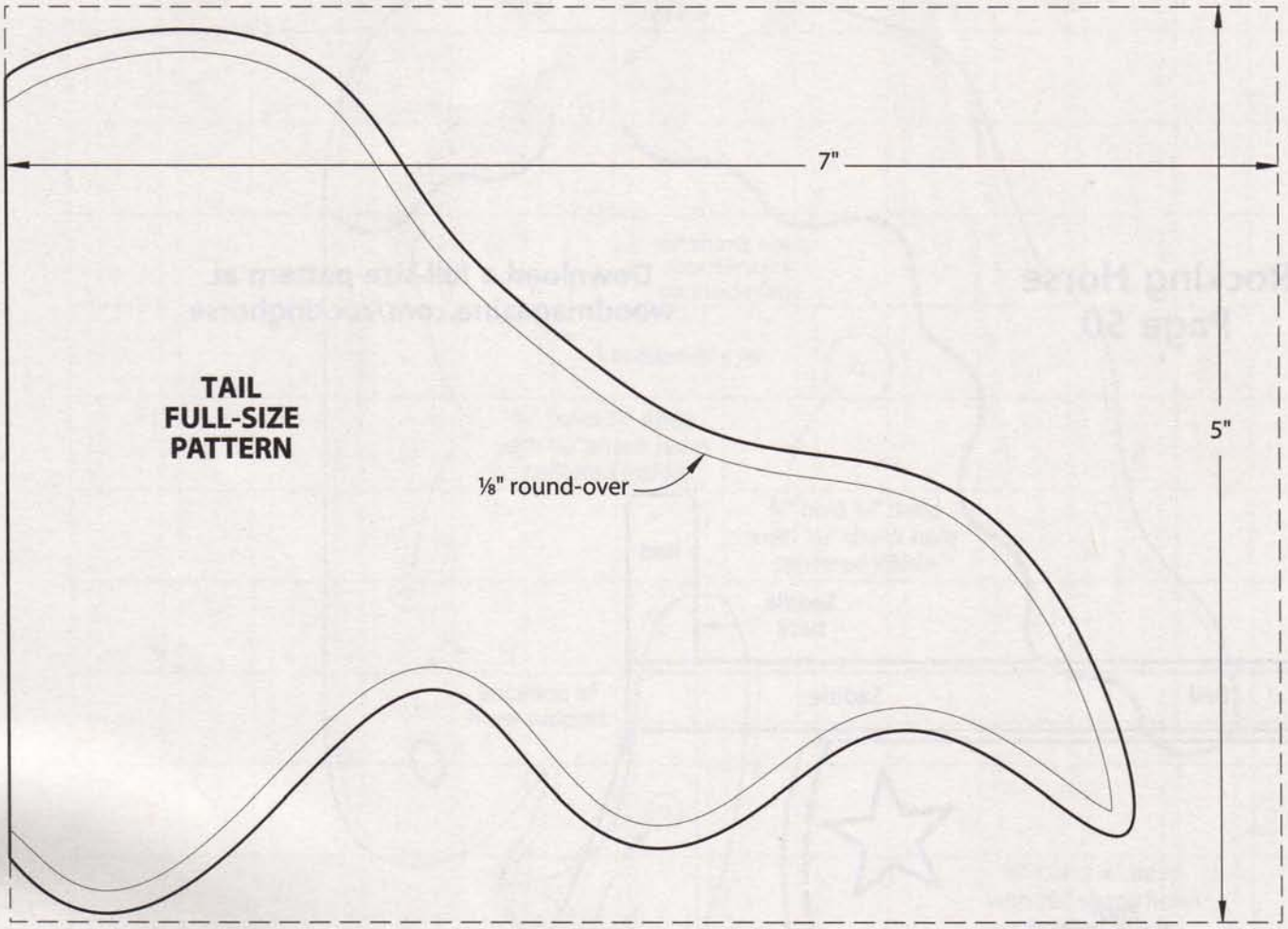

Location of ear
5/32" shank hole, countersunk on inside face
Location of eye
3/8" holes 1/4" deep with 5/32" shank holes centered inside
3/4" hole 3/8" deep with 5/32" shank hole centered inside
Location of front support
3/8" holes 1/4" deep with 5/32" shank holes centered inside
Location of center support
Location of footrest
Shank hole, countersunk on inside face
1/8" round-over

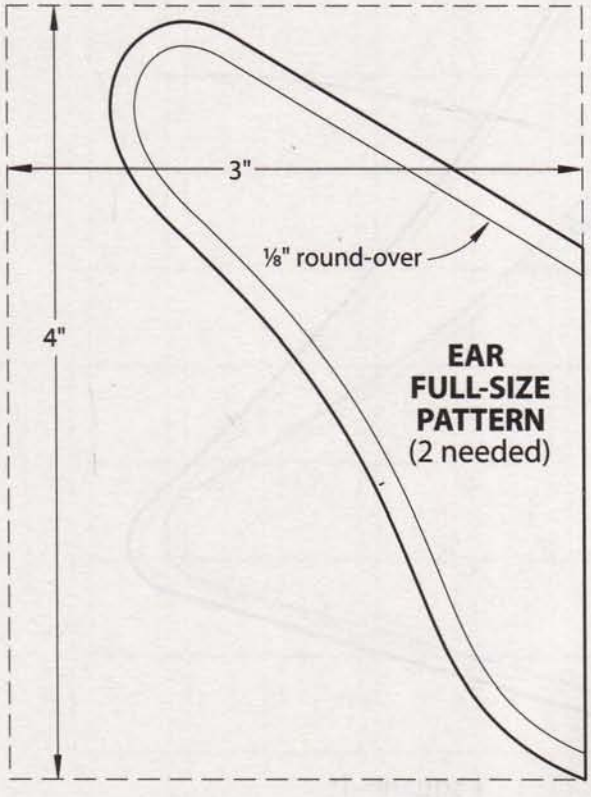
Rocking Horse
Page 50

Download a full-size pattern at woodmagazine.com/rockinghorse

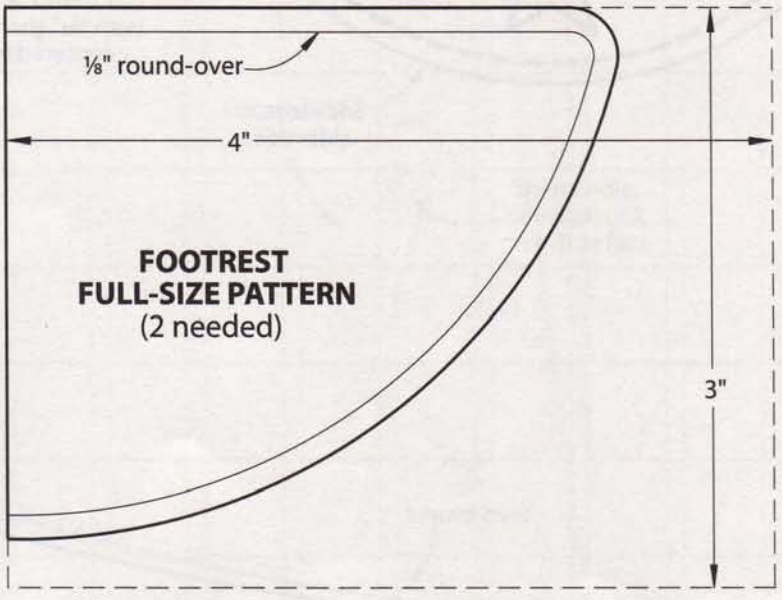


1 square=1"
Enlarge 200% for full-size pattern.





Rocking Horse
Page 50



WIFE APPROVED

THE NEW SAWSTOP PROFESSIONAL CABINET SAW: AFFORDABLE SAFETY AND PERFORMANCE

Listen up guys, your wife is going to love this saw — maybe even more than you do. First, it stops on contact with skin and prevents serious injuries. Second, it's an awesome saw — powerful, well-built, durable. Finally, it's priced about the same as other cabinet saws, so why not choose the one that also comes with peace of mind?

Go to sawstop.com/wifeapproved and we'll send her a persuasive information kit, including a DVD that will close the deal.

SawStop

BASIC-BUILT™
GREAT PROJECTS MADE SIMPLE.

Quick & Easy Rocking Horse

You won't have to pony up for a lot of tools or materials to put a smile on a child's face with this classic toy.

WHAT YOU'LL NEED

- **Materials:** A ¾×20×72" edge-glued pine panel and one ¾×8" dowel.
- **Blades and bits:** 20-tpi jigsaw blade, ⅛" round-over bit, ½" pattern bit, ¾" Forstner bit, 5/32" and ⅜" drill bits or ⅜" countersink/counterbore drill bit.

No cartoon DVD can take a child to places in his imagination with the speed of this rocking horse. You'll be sitting tall in the saddle, too, knowing you built this pine pony using simple, handheld power tools. So gallop on into your shop and let's get started.

Jockey that jigsaw

1 Make two copies each of the **ear** and **footrest** and one copy of the **tail** full-size patterns from the *WOOD Patterns®* insert. Enlarge the **body** half-size pattern by 200 percent, and make two copies. (Or download free full-size patterns at woodmagazine.com/rockinghorse and print them at your local copy shop. You can also draw the pattern on a 1" grid to enlarge it.) Use spray adhesive to mount the patterns on a ¾×20×72" edge-glued pine panel, as shown in the **Cutting Diagram**. (We purchased an edge-glued

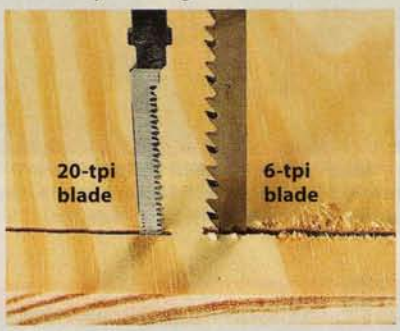
PROJECT HIGHLIGHTS

- The rocking horse seat rests 12" above the floor—ideal for children 12 months to 3 years old.
- Apply a clear finish for simplicity, or paint using the easy-to-follow patterns.

SHOP TIP

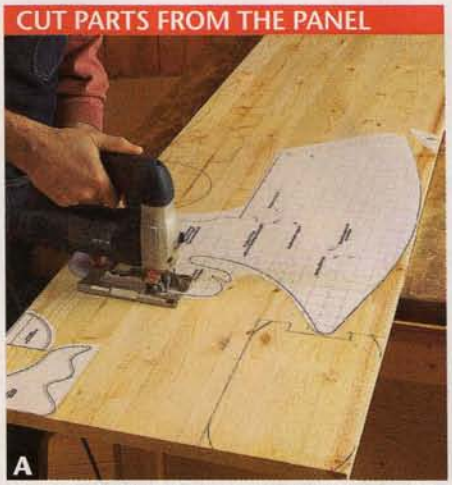
Fine teeth cut cleanly

A jigsaw may not leave the clean, square edges of a bandsaw, but the right blade can bring it pretty close. Instead of 5- or even 10-teeth-per-inch (tpi) blades, use a 20-tpi blade with a narrow body. You'll get less tear-out, and the narrow body does a better job in tight curves.

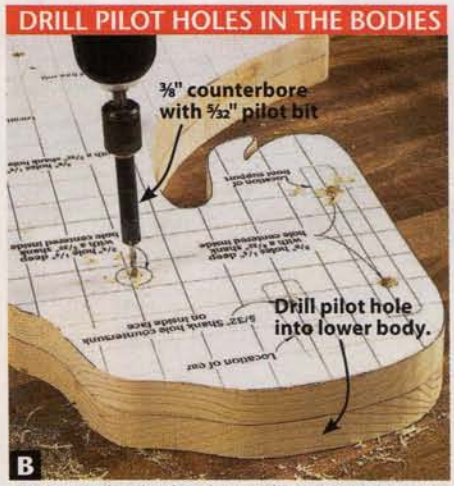


panel at a local home center.) Then lay out the locations of the saddle, front support, center support, saddle back, and two saddle sides, as shown.

2 Using a jigsaw with a 20-tpi blade [**Shop Tip** *above*], cut all the parts just outside the pattern lines [**Photo A**]. Sand the part edges to the pattern lines. (To quickly duplicate identical parts, see the **Skill Builder** on *page 52*.)



Orient patterns on the panel as shown in the Cutting Diagram to ensure the grain on all parts runs in the directions shown.



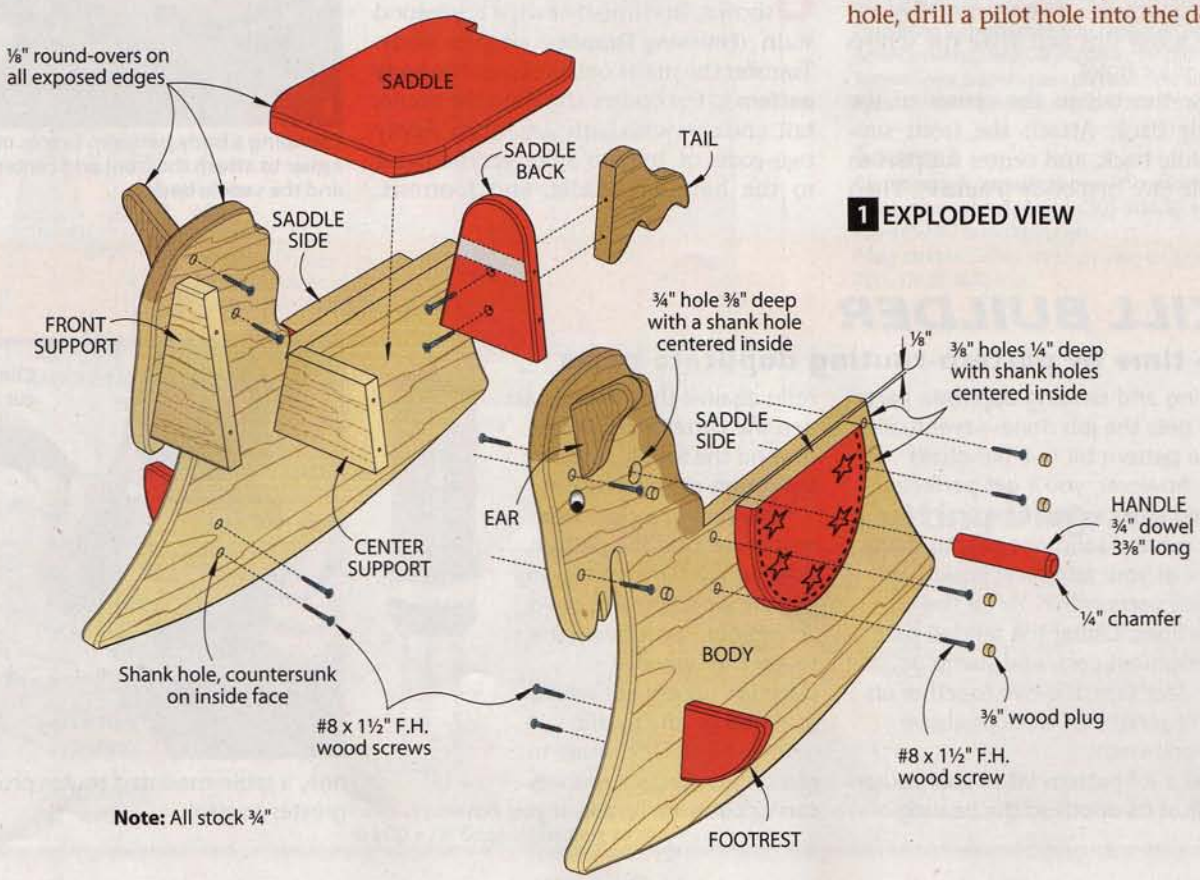
An upper-body shank hole becomes a starter hole for drilling shanks—some of them with counterbores—in the lower body.

3 Using double-faced tape, adhere one body pattern-side up on the other body. (Note that there's a left and right body.) Drill shank holes, some with countersink/counterbores, where shown on the pattern [**Photo B**]. The bit should penetrate the lower body. Separate the bodies and finish drilling shank holes through the other body. Turn that body over and drill countersink/counterbores where noted on the pattern.

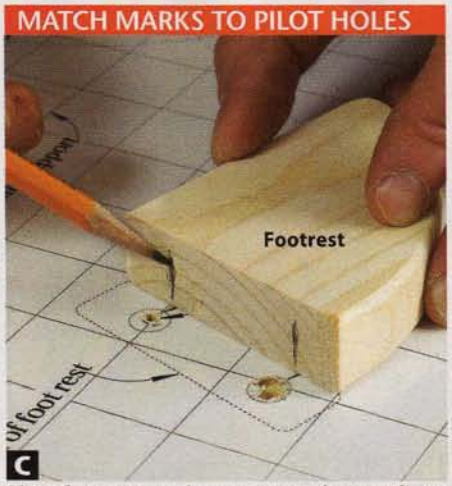
4 Rout ⅛" round-overs where shown [**Drawing 1**]. Hand-sand this profile around the mouth on the bodies where the bit can't reach (in case someone *does* look a gift horse in the mouth).

5 Use the body pattern to transfer shank-hole locations to the footrests, ears, front support, center support, and saddle back [**Photo C**]. Then drill centered pilot holes at each mark [**Photo D**].

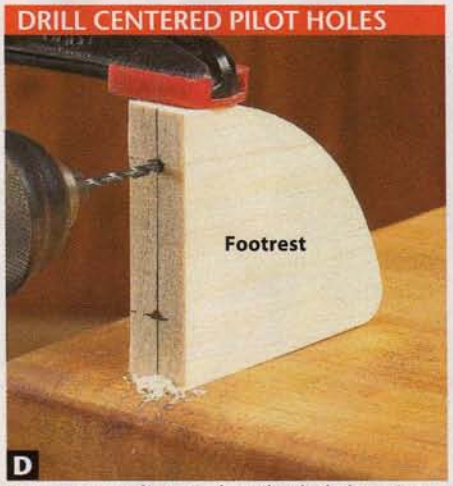
6 Cut two 3⅜"-long ¾" dowels for the handles. Sand a chamfer on one end of each, then drill a centered pilot hole into the other end. ***Quick tip! Center with certainty.*** To center a hole in a handle end, first insert the dowel into its counterbore in the body with the chamfered end out. Guided by the body shank hole, drill a pilot hole into the dowel.



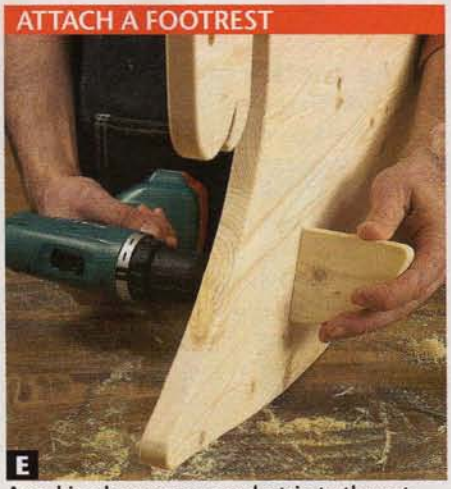
1 EXPLODED VIEW



Place footrests and ears next to their outlines on the body pattern to transfer pilot hole locations to the parts.



Draw a centerline on the pilot-hole location marks; then drill 3/32" pilot holes in the footrests and ears.



A rocking horse may need a trip to the vet (meaning you). So attach footrests, ears, and handles without glue for easy repairs.

7 Remove the paper patterns from all parts and sand each to 220 grit.

Quick tip! Avoid a sticky situation. Spray-adhesive residue gums up sandpaper. Wipe away residue with a soft cloth soaked in mineral spirits; then allow the wood to dry before sanding.

Entering the home stretch

1 Screw (don't glue) one ear to each body [**Drawing 1**]. Then attach the footrests [**Photo E**] and handles to the bodies.

Quick tip! Position parts precisely. Drive screws through the body until the tips just protrude. Then position the pilot holes in an ear or footrest over the screw tips and drive the screws into the pilot holes.

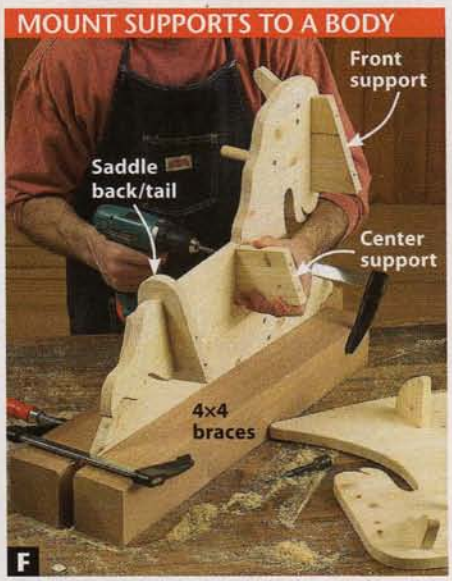
2 Screw the tail to the center of the saddle back. Attach the front support, saddle back, and center support to the inside face of a body [**Photo F**]. Then screw the second body to the supports [**Photo G**], making sure the flat areas that will support the saddle are parallel.

3 Glue and clamp the saddle sides to the body as shown [**Photo H**].

4 Apply construction adhesive to the body where shown [**Photo I**] and insert the saddle. Weight the saddle until the adhesive cures.

5 Cut 12 plugs in 5/16"-thick pine scrap using a plug cutter (**Sources**). Glue and sink them into counterbores in both bodies. Saw or chisel the plugs flush, and sand them smooth to 220 grit.

6 For the look of the rocking horse shown, first brush or wipe Fruitwood stain (**Finishing Supplies**) on the body. Transfer the mane outline from the **body pattern** to the bodies and stain the mane, tail, and ears with Early American. Apply two coats of Tomato Spice acrylic paint to the handles, saddle, and footrests.



Clamping a body between braces makes it easier to attach the front and center supports and the saddle back.

SKILL BUILDER

Save time by pattern-routing duplicate parts

Jigsawing and sanding duplicate parts to size gets the job done—eventually. Using a pattern bit in a handheld router, however, you'll get perfectly matched parts in less time.

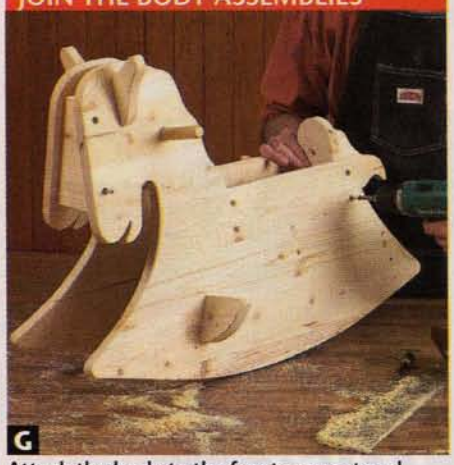
First cut and sand one part to shape to serve as your template. Rough-cut duplicate parts within 1/16" of the pattern lines. Center the sanded part on a rough-cut part, and clamp or double-face tape the two together on pieces of scrap that lift both above your workbench.

Install a 1/2" pattern bit in your router and adjust its depth so the bearing rides against the sanded part and the cutter extends just beyond the full thickness of the rough-cut part below.

Now rout in a clockwise motion around the pattern. To keep the bit from tearing out the wood on end grain, "climb-cut" by moving the router the opposite direction. Climb-cut with a firm grip on the router.

To get a feel for where to climb-cut, practice routing curves cut from scraps. If you have one, a table-mounted router provides greater control.

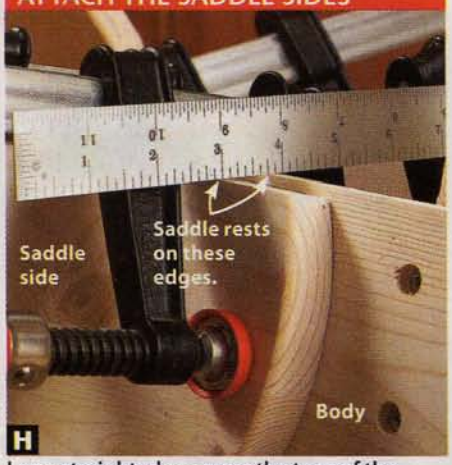
JOIN THE BODY ASSEMBLIES



G

Attach the body to the front support and saddle back with one screw each. Align the parts before driving the remaining screws.

ATTACH THE SADDLE SIDES



H

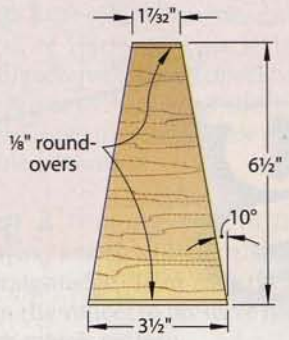
Lay a straightedge across the tops of the bodies, and mount the saddle sides so they just touch the straightedge.

GLUE THE SADDLE TO THE BODIES

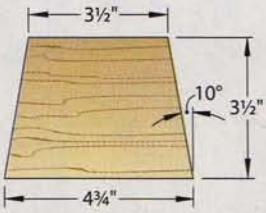
I

A bead of construction adhesive fills the gap between the saddle and the angled edges of the bodies.

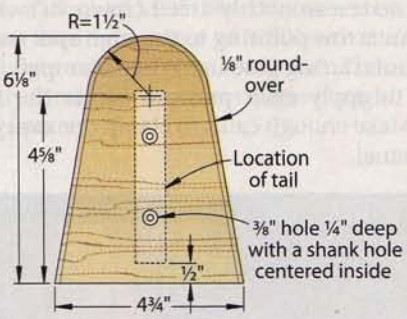
2 PARTS VIEW



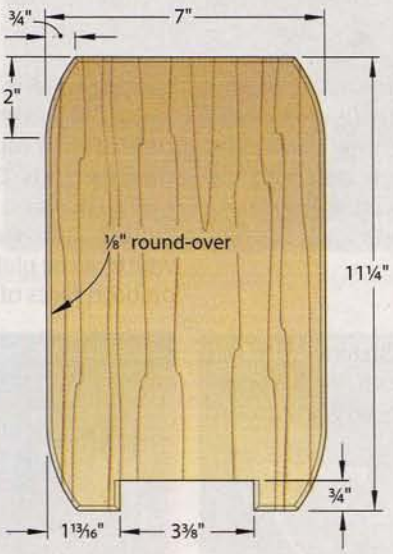
FRONT SUPPORT



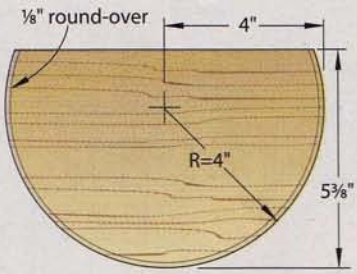
CENTER SUPPORT



SADDLE BACK



SADDLE



SADDLE SIDE
(2 needed)

Transfer the star pattern to the saddle, and the nostril shape to the body. Outline the stars and make flowing lines on the mane and tail in brown using a paint pen. Fill in the nostril with the brown paint and let dry. Then apply three coats of clear finish to the entire horse, and glue the 28mm wiggle eyes where shown on the pattern.

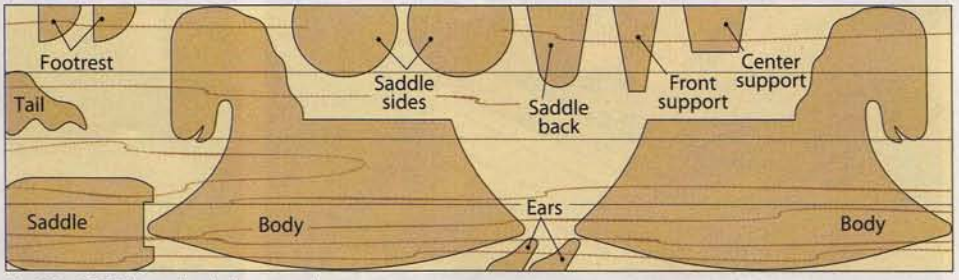
Written by **Bob Wilson** with **Kevin Boyle**
Project design: **Kevin Boyle**
Illustrations: **Roxanne LeMoines**, **Lorna Johnson**
Painted by **Pat McClure**

Supplies: Spray adhesive, construction adhesive, #8×1½" flathead wood screws (24).
Finishing supplies: Minwax Fruitwood and Early American stains, Delta Ceramcoat acrylic crafts paint in Tomato Spice, a brown paint pen, and clear satin topcoat.
Eyes: 28mm wiggle eyes, available at crafts supply stores.

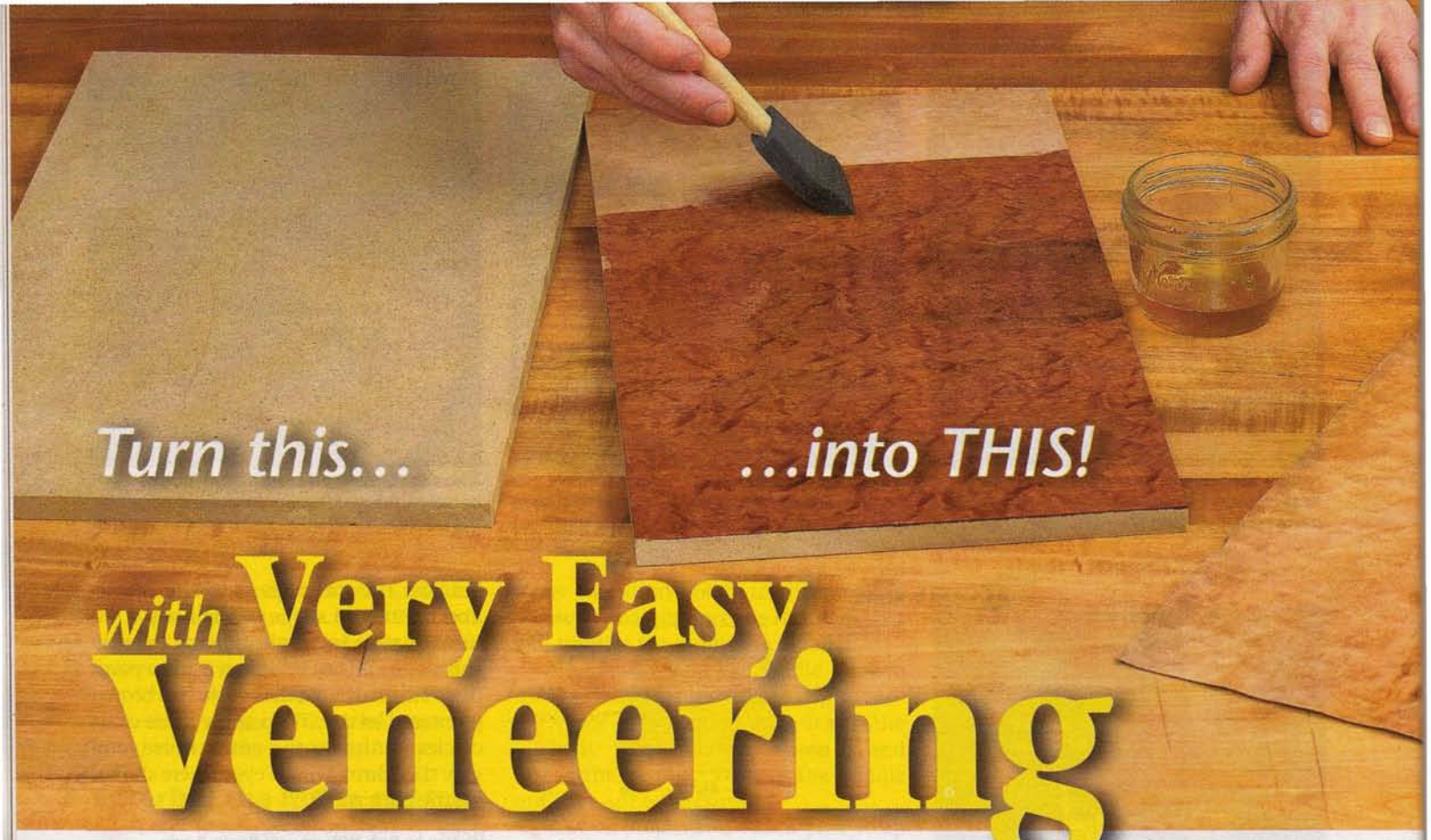
Sources

Countersink/counterbore: ⅜" counterbore/countersink with 5/32" pilot no. CS03-0156, $7, McFeely's, 800-443-7937 or mcfeelys.com
Plug cutter: Self-centering ⅜" plug cutter no. MBT-0375, $16.05, McFeely's.

Cutting Diagram



¾ x 20 x 72" Edge-glued pine panel



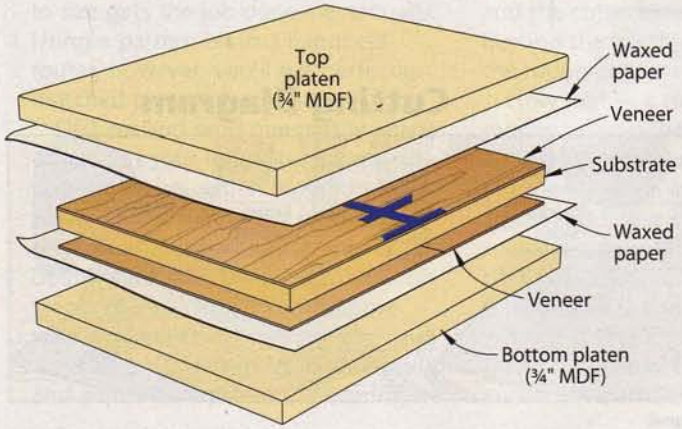
with Very Easy Veneering

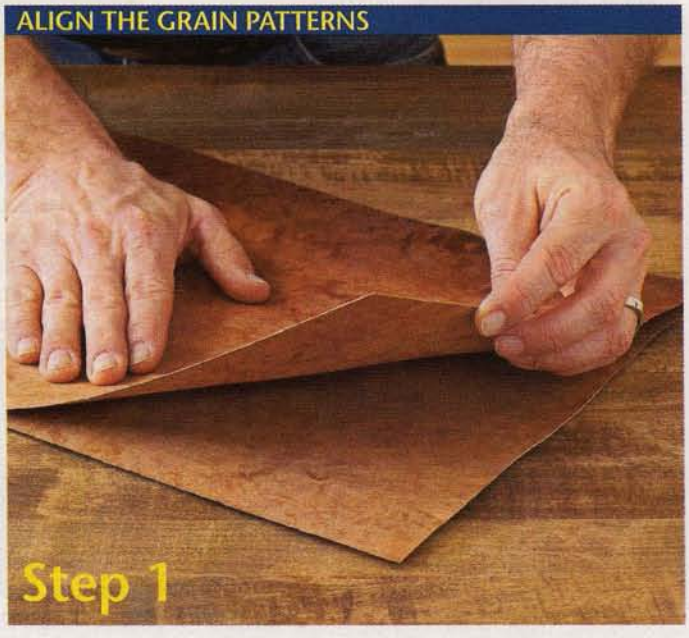
Some projects, like the drop-front desk on *page 32*, beg for the eye-catching grain pattern of a highly figured, book-matched panel. But it can be tough opening your wallet to pay for an exotic piece of lumber, and then gathering the courage to resaw and plane it. Veneer gives you that breathtaking look without breaking the bank—and applying it is easier than you might think.

Deal with pressing matters

Start by gathering waxed paper and making platens (stiff, flat ¾"-or-thicker MDF, particleboard, or plywood) for a veneer press, as shown *below*. Cut the platens slightly larger than the largest panel to be veneered. Also prepare cauls of ¾" hardwood 2" wide [**Photo 6,** *page 56*] by bandsawing or sanding one edge of each caul to create a smoothly-arced crown 1/16" wider than the ends. Draw an arrow pointing to the high spot so it's easy to position the cauls during glue-up. When clamped, the arched cauls flatten to apply even pressure across the full width of the platens. Make enough cauls to clamp one every 4" on both faces of the panel.

LOW-TECH VENEER PRESS





Now cut a panel, called a substrate, to which the veneer will be glued. We like MDF because of its stability and flatness. For ⅛"- or ¼"-thick panels, tempered hardboard works well. Because veneer tends to slip on wet glue, cut each substrate about ½" wider and longer than finished dimensions, and trim the panel to final size after veneering.

Next, decide if you want a book-match on the panel [**Skill Builder**, *right*]. For panels covered by a single sheet of veneer without a book-match, skip down to trimming the veneer in **Step 5**.

Step 1 Choose two consecutively-sliced pieces of veneer and stack them so the grain patterns align as closely as possible. Apply painter's tape to the ends of the mated pair to prevent the sheets from shifting [**Photo 2**].

Step 2 Trim one edge of the pair by drawing a fresh utility knife blade along a straightedge. Trim as little as possible from the veneer to preserve the intended book-match pattern.

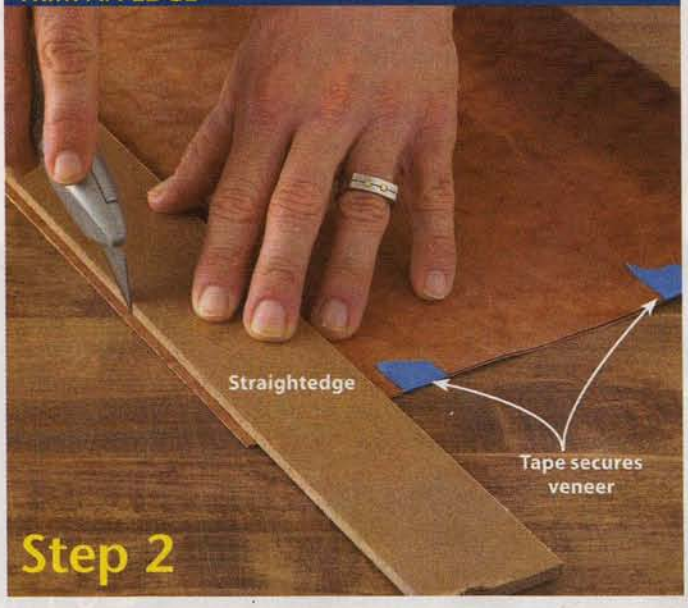
Step 3 Joint the cut edges by sticking a piece of self-adhesive, 180-grit sandpaper to a block of MDF. Place the sheets of veneer on a scrap piece of MDF with the cut edges overhanging about 1/16". Then gently sand the cut veneer edges straight and square.

SKILL BUILDER

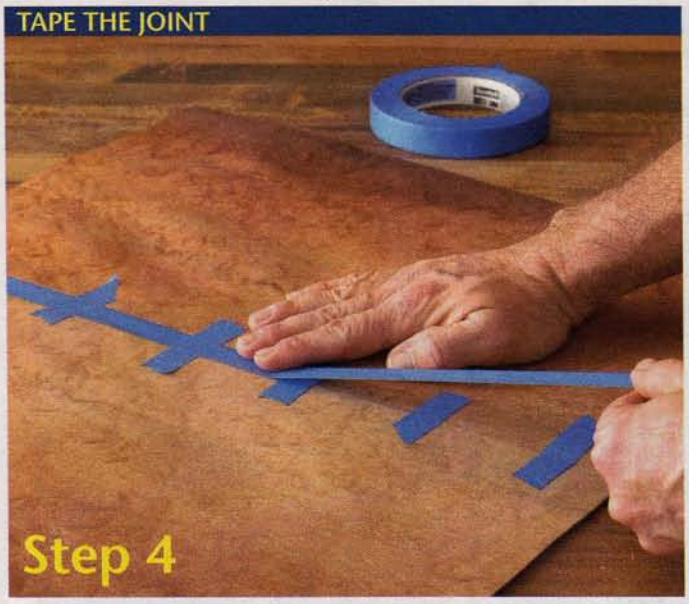
Book-matching gives panels character

Using a single piece of plain-sawn veneer on a panel (*left* photo) looks nice enough, but book-matching two pieces of veneer makes a panel really "pop" (*right* photo). It's called a book-match because you take two sheets of veneer, sliced one after the other from the same log, and separate them as if you were opening the pages of a book. Wilder grain patterns, such as cathedral grain or burls, produce highly interesting panels.

TRIM AN EDGE



JOINT THE EDGE



Step 4 Remove the painter's tape, and open the pieces like the pages of a book. With the good side of the veneer faceup, butt the jointed edges together, and draw the joint tight with short lengths of painter's tape stretched across the seam. Then lay another strip of tape down the full length of the joint.

Step 5 Draw centerlines on opposite edges of the substrate panel, and then place the substrate on the veneer, aligning the marked centerlines with the taped joint line. Using a utility knife, trim around the substrate. Repeat this process to create a veneer sheet for the opposite face of the panel.

Step 6 Stand half of your cauls on a pair of risers with the crown of the cauls facing up, layer a platen and waxed paper on them, and get your clamps open and ready. Spread a thin, even coat of yellow glue on one face of the substrate. Align the veneer on the substrate (the taped side should face away from the substrate) and press it down; then place this assembly veneer-side down on the waxed paper [**Drawing,** *page 54*]. Spread glue onto the top face of the substrate and position the other veneer on it, taped face up. Place the second piece of waxed paper, the top platen, and the remaining cauls, then clamp the press firmly. Allow the glue to dry for at least four hours before removing the clamps.

Step 7 If the veneer shifted during glue-up so the pattern is no longer square to the edges, secure the panel to a sled using double-faced tape, and run the sled against the tablesaw rip fence to true up one edge. Use this sawn edge against the miter gauge or rip fence and trim the panel to finished size. If the veneer pattern remained square to the panel, true up one edge by sanding with 80-grit sandpaper on an MDF block to remove glue squeeze-out and any overhanging veneer. Then cut the panel to finished size.

Written by **Craig Ruegsegger** with **Jeff Mertz**
Illustration: **Roxanne LeMoine; Lorna Johnson**

✓Yes

xNo

✓Yes

✓Yes

✓Yes

✓Yes

✓Yes

✓Yes

✓Yes

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The 25 Best Innovations of the Past 25 Years

Imagine a woodworking world without portable planers, one-handed bar clamps, and Norm Abram. That was the landscape when *WOOD*® magazine made its debut in 1984. Looking back on the past quarter century, our editors came up with a list of the greatest breakthroughs since then. Agree or disagree, here it is.

Ryobi benchtop planer

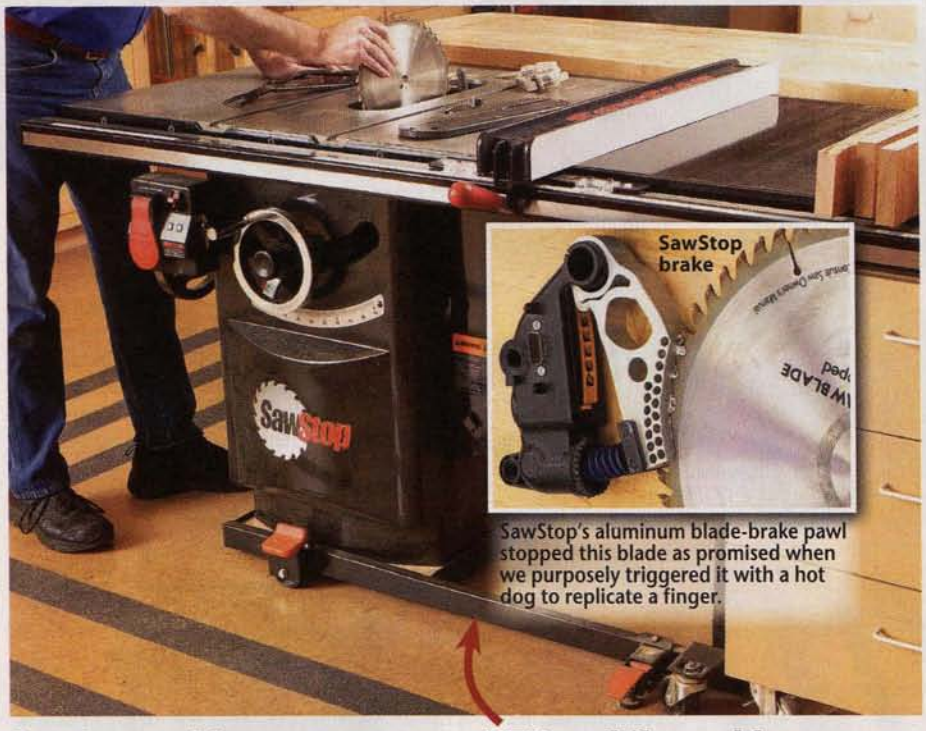
Prior to the mid-'80s, if you had a thickness planer it ran on 220 volts, used resharpenable steel knives, and weighed about a half ton. But Ryobi's AP-10 benchtop planer, launched in 1985, changed everything. It brought power planing to the masses in a portable, affordable, 110-volt machine. And it gave many hobby woodworkers their first opportunity to work with rough-sawn hardwoods. A few years later Makita introduced self-indexing disposable steel knives, eliminating the hassles of sharpening and resetting knives.

Quick-Grip clamps

Nebraska boat-builder Joe Sorensen needed a third hand to hold assemblies during glue-ups, so he came up with a one-handed bar clamp that today we know as the Quick-Grip clamp. Joe sold his invention to a manufacturer whose brands were eventually acquired by Irwin Industrial Tools. The clamps debuted in 1989 to the delight of countless woodworkers, and spawned legions of similar clamps.

Products that broke new ground in woodworking

Whether invented out of necessity or simply the result of someone's search for a better mousetrap, these tools and accessories made landmark impacts on the world of woodworking.



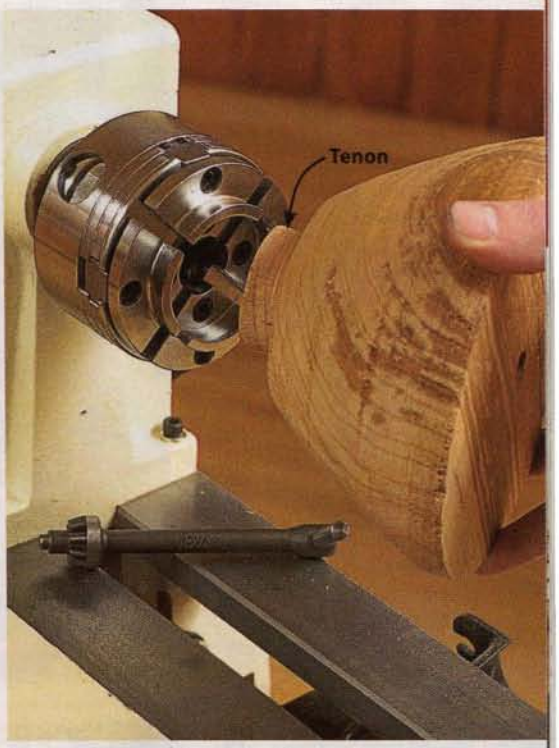
SawStop's aluminum blade-brake pawl stopped this blade as promised when we purposely triggered it with a hot dog to replicate a finger.

SawStop tablesaw

Doing for tablesaws what airbags did for cars, SawStop could be the single greatest safety device in woodworking. Full-time patent attorney and part-time woodworker Steve Gass came up with the idea of making a safer saw in 1999 after his father caught his hand in a blade. Gass invented a blade brake, activated by skin contact, that stops a spinning blade in 1/200 of a second, leaving the victim with only a scratch. There are 17,000 models in use today, with more than 500 confirmed "finger saves," according to Gass.

HTC mobile tool bases

The inspiration was surpisingly simple: With the ability to move machines around, woodworkers could make better use of smaller shop space and dust-collection hook-ups. So Tim Hewitt welded together angle-iron steel frames to match the footprints of heavy machines, added casters, and voila! Word spread quickly, and his mobile bases proved so popular that he couldn't meet consumer demand making each one by hand, so in 1984 the Hewitt Tool Company (HTC) went into mass production.



Nova four-jaw lathe chuck

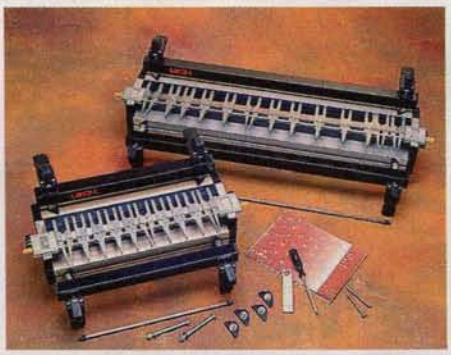
Square-jawed lathe chucks had been around for decades in metalworking, but in 1988 Teknatool introduced a self-centering four-jaw chuck with circular jaws, and that style has since become the standard in woodturning. The Nova chuck enabled turners to hold—and then shape—a wood blank by tightening the jaws around a simple tenon, which they cut off after finishing the bowl. It also featured an innovative removable screw in the center of the chuck, used to mount the piece initially while you turned the tenon—no need for a faceplate. Providing a secure method to hold stock without faceplates and invasive screws, four-jaw chucks have played a large role in the growth of bowl, platter, and hollow-vessel turning.

Titebond II & III glues

In 1991 Franklin International debuted the first one-part, water-resistant wood glue that cleaned up with water and met the American National Standards Institute (ANSI) requirements for Type 2 water resistance. Ready-to-use Titebond II was a huge hit with woodworkers because it was the first yellow wood glue suitable for outdoor projects. Then in 2004, Franklin International topped itself with the launch of Titebond III, the first one-part wood glue to achieve ANSI Type 1 water resistance, the highest level possible. Both formulas remain the same today.

JessEm router lift

With the rise in using router tables in home shops during the 1990s, Canadian Darrin Smith longed for a table with the precise height adjustments of a shaper. So, in 1999 he introduced the JessEm Rout-R-Lift, the first mechanism that enabled woodworkers to adjust bit height from above the table. His invention spawned an entirely new accessory category—router lifts—that now boasts more than a dozen models in various brands, as well as routers with built-in lift mechanisms.

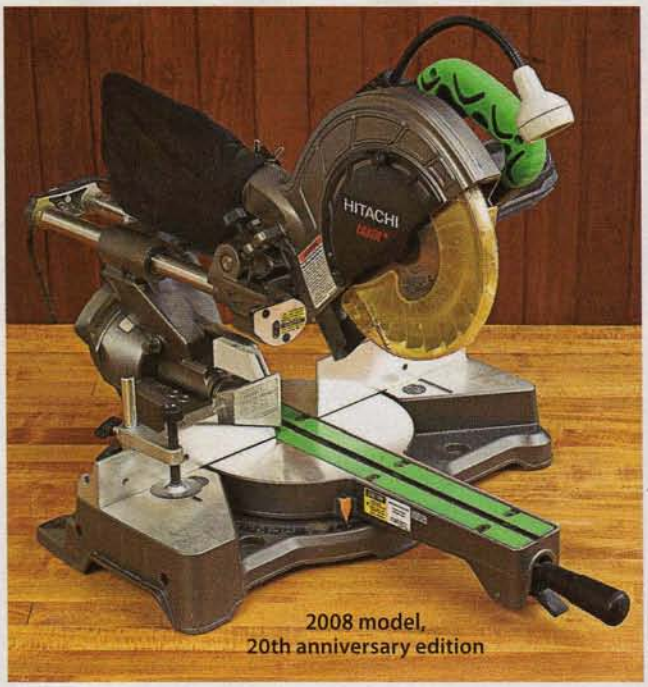


Leigh dovetail jig

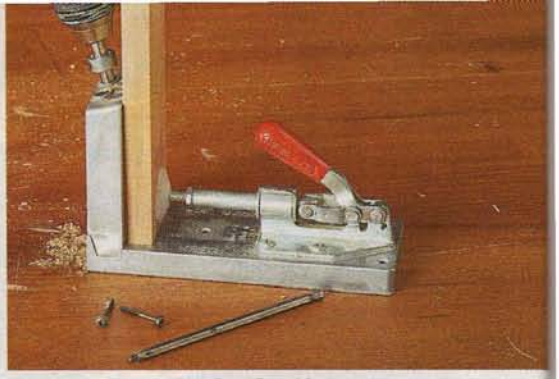
It wasn't the first dovetail jig for routers, but the Leigh Industries D1258, created in 1984, was the first do-it-all, adjustable jig. While previous jigs (including one from Leigh) offered the ability to rout either through or half-blind dovetails, the D1258 enabled users to rout both types on the same unit. It also featured adjustable guide fingers for varying the width of pins and tails. Later models added the ability to rout sliding dovetails and box joints.

Hitachi sliding compound mitersaw

When Hitachi debuted the first sliding mitersaw in 1988, few people realized it also marked the unofficial retirement of radial-arm saws. The model C8FB sported an 8½" blade and a direct-drive universal motor that slid forward and back on rails for crosscut capacity nearly double that of standard compound mitersaws of the time. "Sliders" became popular with woodworkers who couldn't afford a radial-arm saw, and their lightweight portability made them easy to transport to jobsites. Later, manufacturers increased blade sizes to 10" and 12", all but replacing the 8½" slider.



2008 model, 20th anniversary edition



Kreg pocket-hole jig

While building kitchen cabinets for his Iowa home in 1986, tool-and-die maker Craig Sommerfeld fashioned a metal jig and stepped drill bit to bore angled holes into the back side of face frames. He then joined the frame members with pan-head screws driven into the hidden pockets. Craig's jig soon became the Kreg Jig. The easy, affordable, and effective joinery method enabled legions of woodworkers to build furniture, cabinets, and other projects for their homes without need for more complicated techniques and tools.

Festool Domino Joiner

Invented by a German engineer searching for a way to combine a biscuit joiner's speed and ease of use with the strength of a mortise-and-tenon joint, the Domino made it possible to quickly, cleanly, and accurately bore mortises for loose tenons. Launched in 2005 by Festool, the Domino carries a $775 price tag for its one-of-a-kind ingenuity.

SketchUp design software

Until about five years ago, you either drew your project plans on paper, found them in magazines, or created them with expensive computer software. Then along came Google's free SketchUp software, a modeling program for creating three-dimensional virtual projects you can disassemble and view from any angle, or in a variety of wood species.

They're not tools, but they help woodworkers grow

Not all woodworking innovation has taken place in manufacturing. Growth in educational materials and greater availability of tools and supplies has had as great an impact.

NORM!—and various educational materials

There's no question *The New Yankee Workshop* and its host, Norm Abram, have, for the past 20 years, inspired countless people to take up woodworking. In addition, woodworking magazines, books, and videos (*WOOD*'s Jim Heavey, *above*) have exploded in number and availability.

Home center expansion

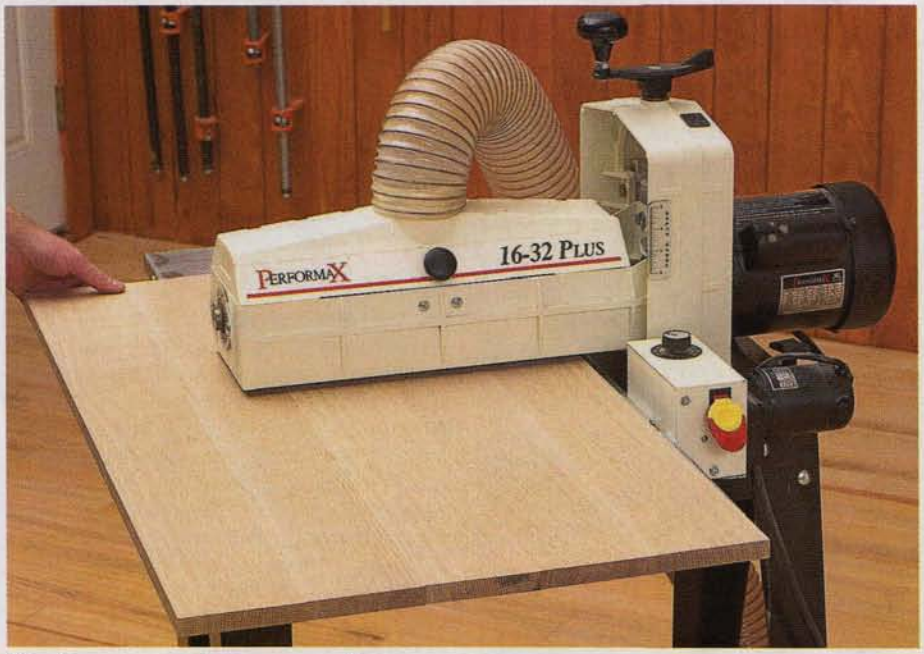
So-called "big box" retailers, found seemingly on every corner, make it possible to get nearly all your project supplies in one place, and at prices typically less than you'll find in specialty retailers.

The Internet

Before about 1995, woodworkers had few resources for immediate help with their questions. Now, that assistance is as close as your computer, thanks to Internet forums and Web sites. You can even choose from thousands of project plans online. And the growth of Web retailers has driven down the price of tools and products, making it easier for beginners ("newbies" on the net) to get into woodworking, and for veterans to expand their arsenals.

Pro tools made affordable for the home shop

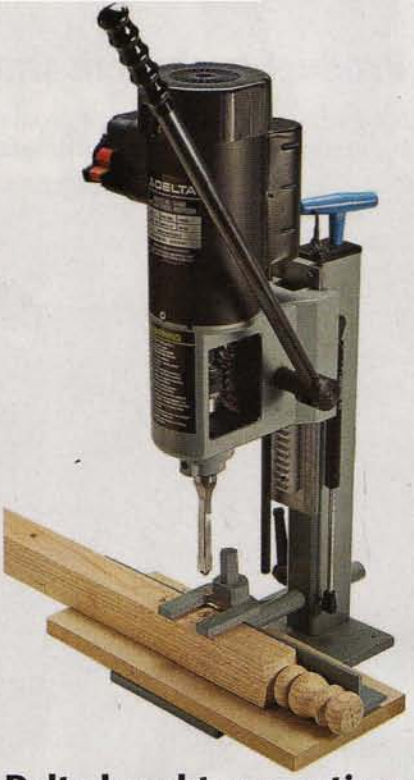
Although the following tools and machines were not the first of their kind, manufacturers' ability to bring them to market at significantly lower prices created meaningful opportunities for cash-conscious woodworkers.



Performax drum sander

Prior to the mid-'80s, only professional shops had wide-panel drum sanders, which typically cost a few thousand dollars. But in 1984, Performax created an affordable drum sanding attachment for radial-arm saws. Then, in 1993, the fledgling company introduced its innovative 16-32 open-ended drum sander for about $500, giving the average woodworker the ability to sand surfaces as wide as 32".

The brand was eventually sold to Walter Meier Holding Company, the owner of the Powermatic and Jet brands, among others.



Delta benchtop mortiser

Powered hollow-chisel mortisers had been around for decades, but if you wanted one you had to shell out big bucks for a floor-standing unit. Benchtop mortisers arrived on the scene in the mid-'80s under the Delta name but manufactured by Multico, an English company. Several years later Delta began manufacturing its own model, selling for about $200—less than half the price of the English version.

Porter-Cable pneumatic nailers

Air-powered brad nailers, pinners, and narrow-crown staplers, popularized in large part by Norm Abram on *The New Yankee Workshop*, have found a home in most workshops thanks to their quick convenience. Originally, pneumatics were made for professional contractors and assembly-line manufacturers. Then, in 1995, Porter-Cable designed and began manufacturing more affordable nailers. Since then, nailers and fasteners have become even more affordable, selling in kits with compact air compressors, typically for about $300 or less.

Porter-Cable biscuit joiner

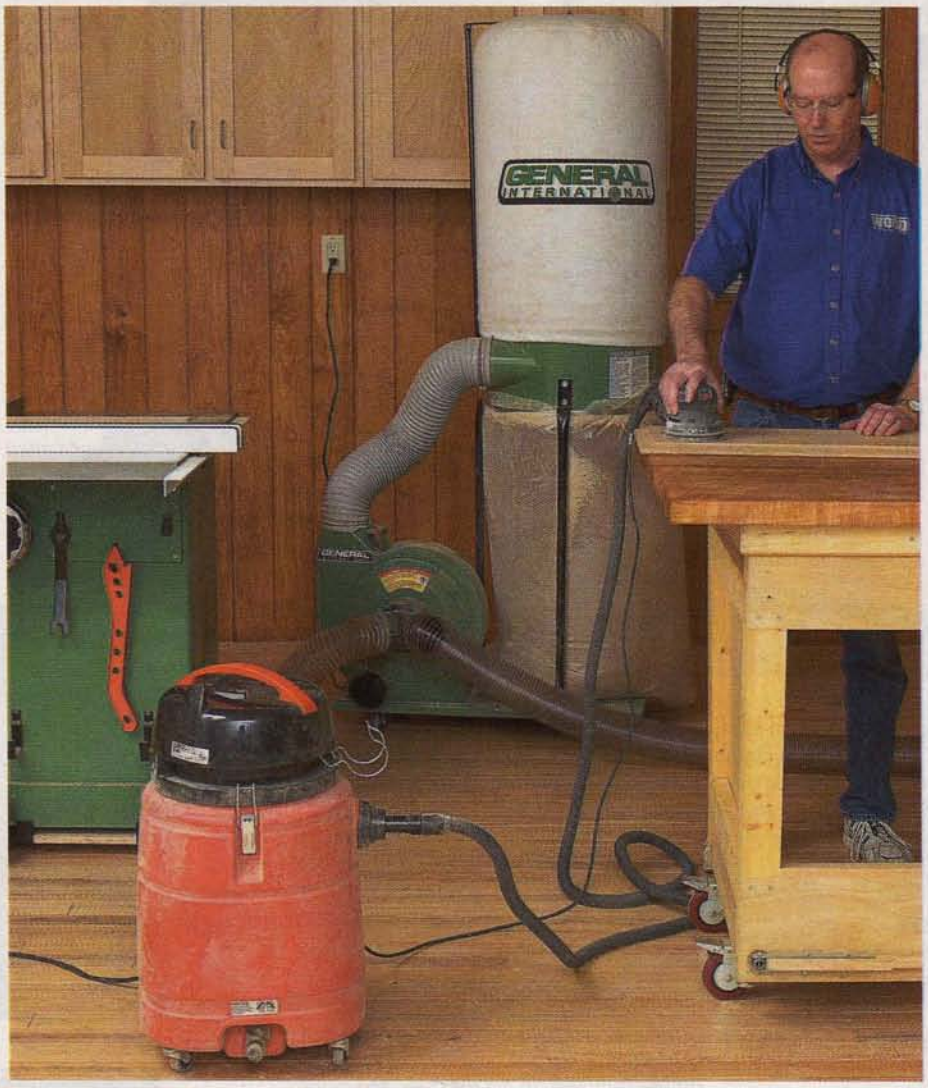
Lamello introduced the portable biscuit joiner in the late '60s, but at a price ($400 to $600) beyond the reach of most home-shop woodworkers. Then, in 1987, Porter-Cable came out with its model 555 biscuit joiner that sold for less than half the price of the Lamello, dawning a new era in quick, affordable joinery.

Improved Asian-made tools

Woodworking machines have been manufactured in Taiwan for much longer than 25 years, but until about the mid-'90s the quality of many of these tools lagged behind those made in the United States, Canada, and Europe. As quality control improved, so did the tools, and more manufacturing shifted to Taiwan and then China. Today, those countries dominate the making of woodworking machinery.

Product evolutions that changed woodworking

Although the following types of products existed prior to 1984, evolution within each category has resulted in higher quality, accuracy, and safety for all of us.



Improved dust collection

As we became more informed of the health risks of breathing wood dust, manufacturers kept pace. They introduced affordable dust collectors, cyclones, and tool-triggered vacuums that not only sucked up the dust at the source, but also kept it contained with ultrafine filters. And tool manufacturers have placed greater emphasis on channeling dust into ports for those machines to better collect it.

Cordless tools

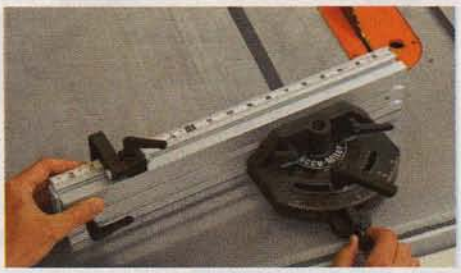
The earliest battery-powered drills in the 1970s were bulky and featured low-voltage batteries, but still seemed like a godsend because they had no power cord. Over the past 25 years manufacturers have boosted power significantly while cutting charge times and weight. They've also added keyless chucks and adjustable clutches, ergonomic designs, and other battery-powered tools, such as circular saws, reciprocating saws, jigsaws, and impact drivers.

Carbide cutting edges

Although manufacturers offered carbide-tipped saw blades and router bits beginning in the late '70s, it wasn't until the late '80s that carbide came into widespread use. With edges that stay sharp about 10 times longer than steel, it's rare now to find saw blades and router bits without carbide tips. Today, many jointers and planers feature cutterheads with replaceable carbide inserts.

User-friendly finishes

Responding to tighter regulatory restrictions, finish manufacturers began making more environmentally friendly products, such as water-based topcoats and stains, that also clean up easily. They also launched products—water and oil-based—that made finishing projects easier and more foolproof: gel stains, wipe-on polyurethanes, and oil-and-varnish blends.



Hyper-accurate rip fences and miter gauges

For more than 50 years tablesaws came with ho-hum rip fences and run-of-the-mill miter gauges that proved unreliable. When the Biesemeyer T-square-style rip fence was introduced in the late '70s, its accuracy, ease of use, and popularity set the standard. Since the mid-'90s, the majority of tablesaw manufacturers have incuded this type of fence as standard equipment on all but the most basic machines. As for the miter gauges, most saws come with a bare-bones model with only three preset stops. That's why in 1988 JDS launched its Accu-Miter gauge that boasted accuracy to 1/30°, and featured a telescoping fence and flip stop. You can now find more than a dozen such aftermarket miter gauges, ranging from about $50 to nearly $300.

Written by **Bob Hunter**

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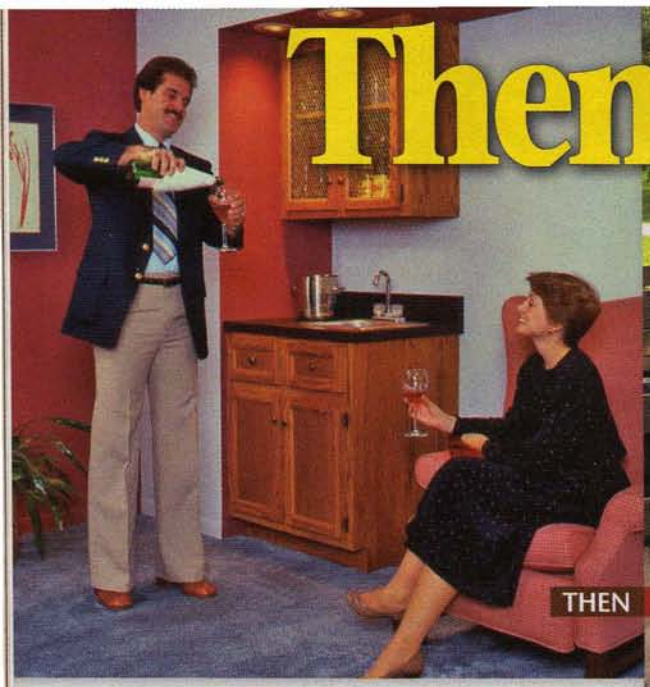
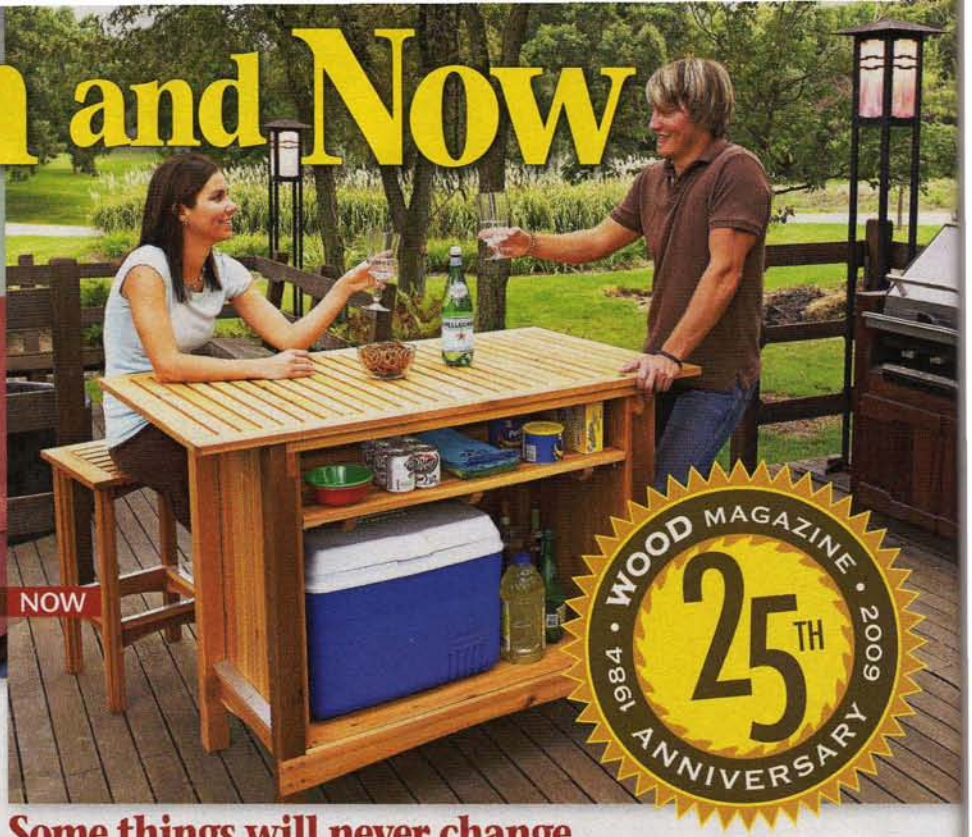




A toast to the first 25 years of WOOD® magazine

Over the past quarter-century, fashions and fads have come and gone. But much in the woodworking landscape would still be easily recognizable to the craftsman of 25 years ago. A router is still a router; a tablesaw is still a tablesaw. And *WOOD* magazine is still here helping woodworkers of all skill levels.

When the first issue of *WOOD* magazine appeared on the newsstands in September 1984, the home woodworking craft was on the cusp of a worldwide revival. *WOOD*'s goal—then as now—was making the hobby more enjoyable for you by providing a variety of shop-tested projects, skill-building techniques, and in-depth tool reviews.

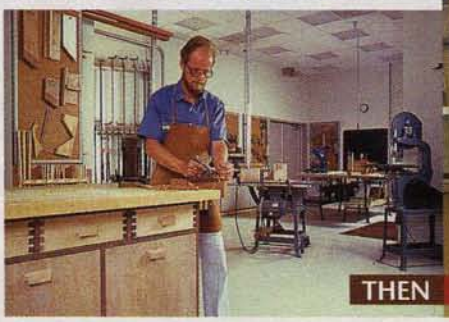
It's been a fun ride, and we hope you'll stay with us for the next 25 years and beyond. Here are some of the highlights so far.

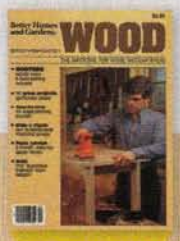
Some things will never change

You might want to avoid that necktie at modern social events, but the cabinets, *left*, from the Jan./Feb. 1985 issue and the outdoor server, *right*, from the July 2008 issue share timeless construction techniques featured in every issue of *WOOD* magazine.

The shop, upgraded

After more than 20 years in the same workshop, the *WOOD* staff upgraded in 2005, moving to a brightly-lit, sound-proofed, 1,600 s.f. shop situated directly in the center of the company headquarters.





September 1984: Issue 1

March 1991: *WOOD* Magazine's first book, *335 Great Shop Tips* is published.

1991: *WOOD* introduces its most popular plan of all time: Graceful Reindeer.

September 1992: The Dream Shop was the first of five Idea Shops.

September 1994: *WOOD* introduces its first newsstand-only special publication.

November 1994: First full-sized Pattern Pack insert appears in issue 74.

1984 1985 1986 1987 1988 1989 **1990** 1991 1992 1993 1994 **1995** 1996 1997

The Internet revolution

In August 1996, woodmagazine.com went online. At the time it was a clearinghouse for additional woodworking content. Later it housed the world's first virtual woodworking show. Now, woodmagazine.com serves a robust online community with photo galleries, blogs, 17 topic-specific forums, and four video sites.

A tip of the hat

Freud is the only advertiser to appear in every single issue of *WOOD* magazine.

A pat on the back

Marlen's not the only one to work on *WOOD* since issue 1. Barbara "Babs" Klein has been a copy editor with the magazine since the beginning. Her nearly superhuman powers of observation enable her to catch even the tiniest of errors. She has no idea how her copy of issue 1 became defaced.

Where's Marlen?

The charter staff of *WOOD* magazine, counterclockwise from left front: Marlen Kemmet, Larry Clayton, Jim Boelling, Lee Gatzke, Darlene Reynolds, Jim Downing, and Pete Stephano.

As *WOOD* grew—adding more issues, six special newsstand-only publications, and a full-fledged online community—the staff nearly doubled. Can you spot the familiar face in both photos? Back row, left to right: Karl Ehlers, Bob Hunter, Lucas Peters, Kevin Boyle. Row 3: Bob Wilson, Greg Sellers, Jeff Mertz, Dave Campbell. Row 2: Craig Ruegsegger, Sheryl Munyon, Margaret Closner. Front row: Marlen Kemmet, Bill Krier.

February 1999: The *WOOD* Store, an online place to buy plans and publications moves to WOODStore.net.

August 2001: Woodworking education hits the road with The Woodworking Shows and Jim Heavey, *WOOD*'s traveling ambassador.

October 2005: The first free video on *WOOD* Online was followed by hundreds of videos on four separate sites.

April 2008: Russian version of *WOOD* magazine launches.

May 2009: Online digital edition of *WOOD* launches.

1998 1999 **2000** 2001 2002 2003 2004 **2005** 2006 2007 2008 **2009**

Collector's Magazine File

To celebrate **WOOD**® magazine's 25th anniversary, here's a classy project that shows off your collection—and woodworking skills.

Dadoes and rabbets and kerfs, oh my!

1 Edge-glue ¼" maple to form two 10×13" blanks for the sides (A). When dry, cut them to size [**Materials List**, *page 68*].

2 For the front (B) and back (C), cut a single ½×4×19¾" blank. Cut the bottom (D) to size [**Materials List, Drawing 1**].

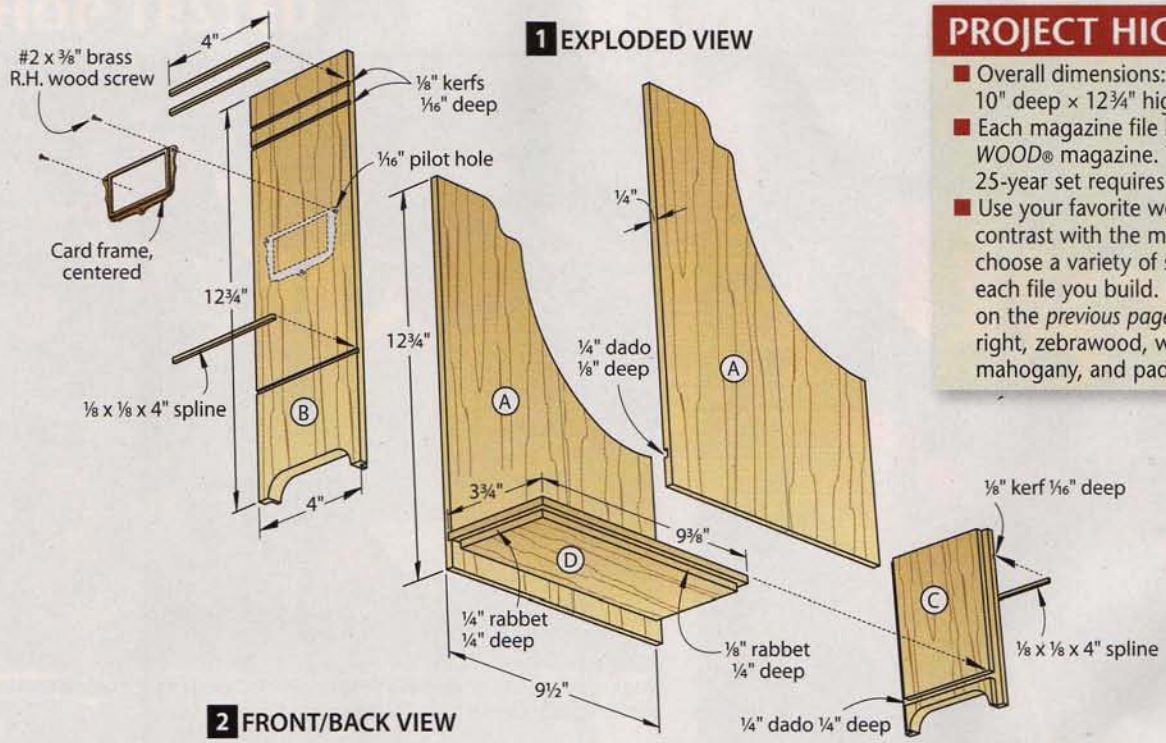
3 Attach a sacrificial auxiliary fence to your tablesaw's rip fence. Using a dado blade, cut ¼" rabbets ¼" deep along both edges of the inside face of the front/back blank (B/C) [**Drawing 2**]. Using a miter gauge, repeat the operation on both ends of the bottom (D) [**Drawing 1**]. Then cut ⅛" rabbets ¼" deep along the edges of the bottom [**Drawing 1**].

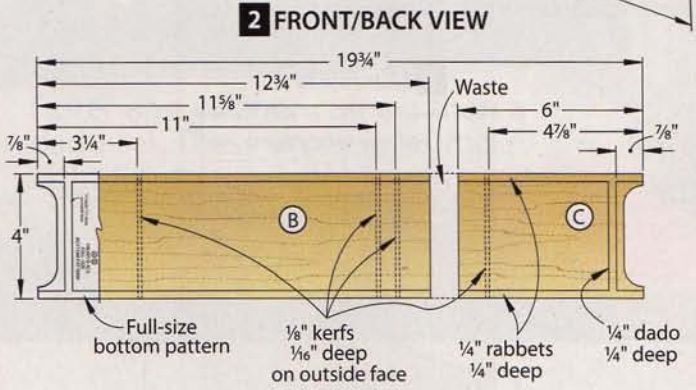
4 Remove the auxiliary rip fence. Using a miter-gauge extension, cut ¼" dadoes ¼" deep ⅞" from both ends of the front/back blank (B/C) on the inside face [**Drawing 2**].

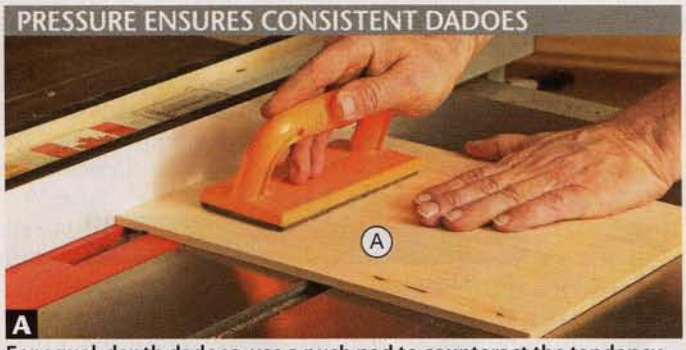
5 Lower the dado blade to ⅛". Cut the ¼" dado ⅛" deep on the inside faces of the sides (A) [**Drawing 3, Photo A**].

PROJECT HIGHLIGHTS

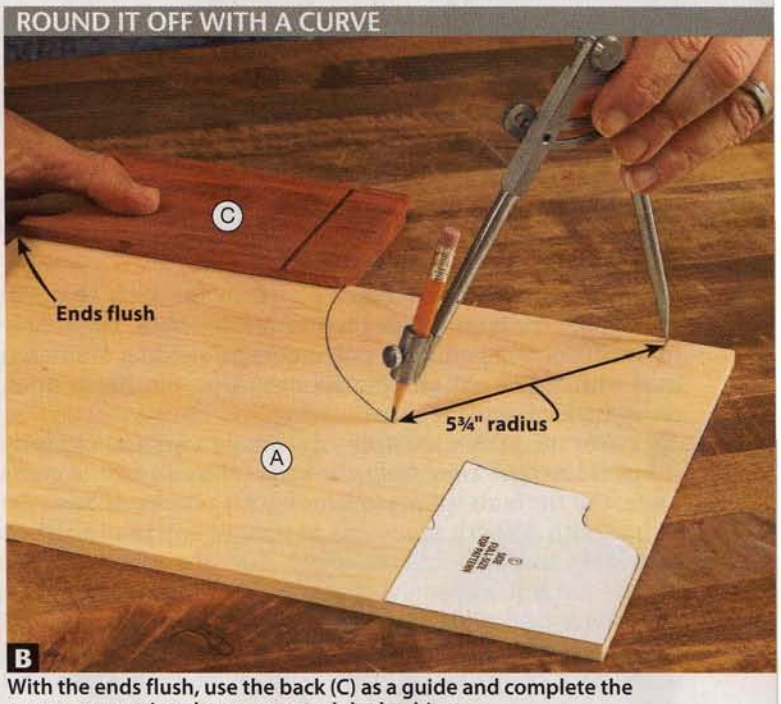
- Overall dimensions: 4" wide × 10" deep × 12¾" high.
- Each magazine file holds 16 issues of *WOOD®* magazine. The complete 25-year set requires 12 files.
- Use your favorite wood species to contrast with the maple sides, or choose a variety of species—one for each file you build. In the set shown on the *previous page*, we used, left to right, zebrawood, white oak, mahogany, and padauk.







For equal-depth dadoes, use a push pad to counteract the tendency of the thin panel to rise as it passes over the dado blade.



With the ends flush, use the back (C) as a guide and complete the curve, connecting the pattern and the back's top.

6 Replace your dado blade with a standard blade and set it to cut ⅛" kerfs 1/16" deep in the outside face of the front/back blank (B/C) [**Drawing 2**].

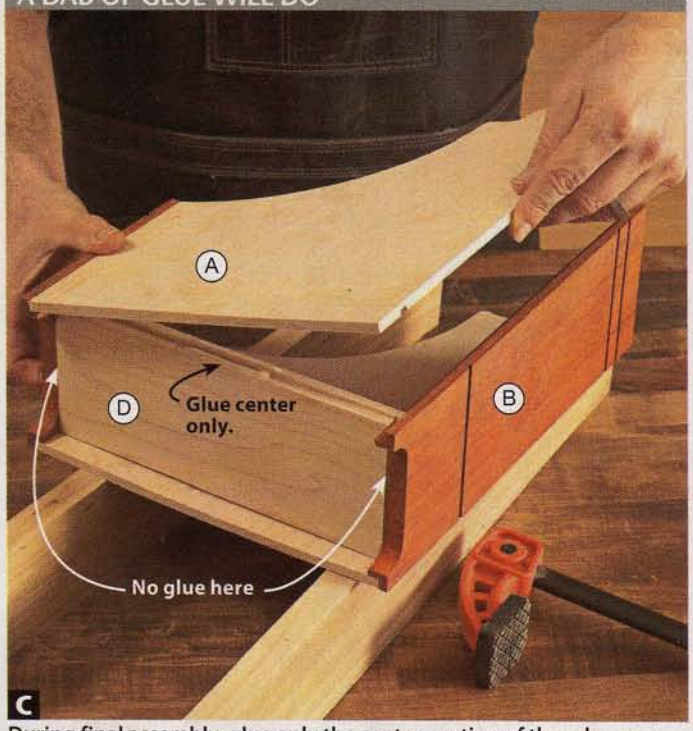
7 Sand the inside face of the front/back blank, (B/C) as well as both sides of the bottom (D), to 220 grit. Crosscut the front (B) and back (C) from the blank [**Drawing 2**].

Add a touch of flourish

1 Make one copy each of the **Front/Back Bottom** pattern and the **Side Top** pattern from the *WOOD Patterns®* insert. Cut the patterns to shape and spray-adhere the **Front/Back Bottom** pattern to the outside face of the front (B), taking care to align it to the bottom corners [**Drawing 2**]. Set the other pattern aside. Bandsaw the cutout and drum-sand to the line. Use the cutout on the front as a template to trace, and then cut out and sand the shape on the bottom of the back (C).

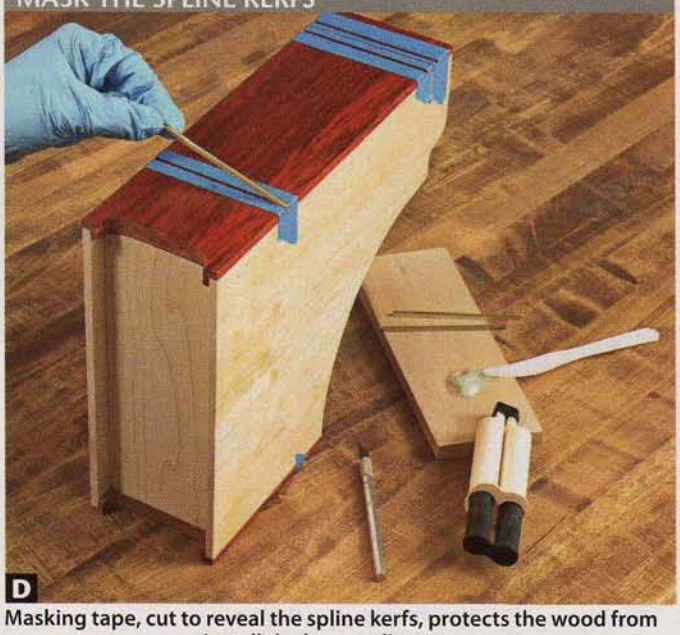
2 Spray-adhere the **Side Top** pattern to the outside face of one of the sides (A) and complete the cutline [**Drawing 3, Photo B**]. Double-face-tape the two sides together, with the inside faces touching. Bandsaw the cutout and sand to the line.

A DAB OF GLUE WILL DO



During final assembly, glue only the center portion of the edges on the bottom (D) to allow for cross-grain wood movement.

MASK THE SPLINE KERFS



Masking tape, cut to reveal the spline kerfs, protects the wood from excess epoxy as you install the brass splines.

Time for assembly

1 Glue and clamp the file together, checking for square. (For the bottom, we glued only the center of the edges and left the ends unglued to allow for movement of the wide sides [**Photo C**].) After the glue dries, ease all edges with sandpaper and sand the remaining surfaces to 220 grit.

2 Apply thin strips of masking tape in the kerfs that will contain the brass splines on the front and back. Then apply two coats of wipe-on satin polyurethane, sanding after each coat with a 320-grit sanding sponge. After the finish dries, remove the masking tape.

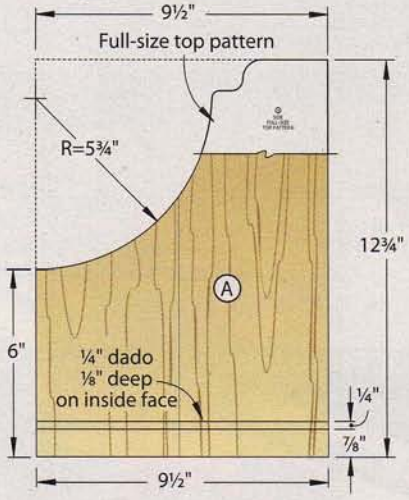
3 Cover the kerfs with strips of masking tape and carefully trim the tape away from the kerfs [**Photo D**] with a crafts knife. Cut the brass splines to length with a hacksaw. Sand the splines with 320-grit sandpaper to remove any tarnish. Then adhere them using 5-minute epoxy. After the adhesive cures, remove the tape and apply a final coat of finish.

4 Because the #2×⅜" brass screws used to attach the card frame are so delicate, we recommend testing their fit in a scrap piece of hardwood. Drill a 1/16" pilot hole. Drive and remove a steel screw to plow a path for the brass screw. Then, install the brass screw. When you are satisfied with the procedure, use the same technique to attach the card frame to the front of the magazine file.

Finally, build a dozen more magazine files to get ready for the next 25 years of *WOOD* magazine.

Written by **Lucas Peters** with **Jeff Mertz**
Project design: **Jeff Mertz**
Illustrations: **Roxanne LeMoine; Lorna Johnson**

3 SIDE VIEW



Materials List

Part		FINISHED SIZE T	W	L	Matl.	Qty.
A*	sides	¼"	9½"	12¾"	EM	2
B*	front	½"	4"	12¾"	C	1
C*	back	½"	4"	6"	C	1
D	bottom	½"	3¾"	9⅜"	M	1

*Parts initially cut oversize. See the instructions.

Materials key: EM–edge-joined maple, C–choice of contrasting woods, M–maple.
Supplies: Double-faced tape, spray adhesive, 5-minute epoxy, #2×⅜" brass wood screws.
Blade: Dado set.

Sources

Brass spline, card frame: ⅛×⅜" ultra-machinable brass, item 8951K18, $3.88 for 6', McMaster-Carr, 609-259-8900 or mcmaster.com. Polished-brass card frame, item 01A57.63, $6.80 each ($5.80 each for 10 or more), Lee Valley, 800-871-8158 or leevalley.com.

SHOP TESTED

Tablesaw Tenoning Jigs

Faster and cleaner-cutting than a dado set, these accessories make tight-fitting tenons in no time.

At first glance, a tablesaw tenoning jig looks intimidating with all those knobs and movable parts. Fact is, you'll use only a few of those parts for 99 percent of your work, and these simple accessories prove so easy to use, you'll wonder why you didn't get one sooner.

Popular sentiment among woodworkers suggests that all tenoning jigs are the same, so you should just buy the least expensive one you can find. We beg to differ. Half of the jigs in our test were pretty much interchangeable, but one stood clearly above the rest. And by the time you reach the end of this article, you'll know exactly which one to buy.

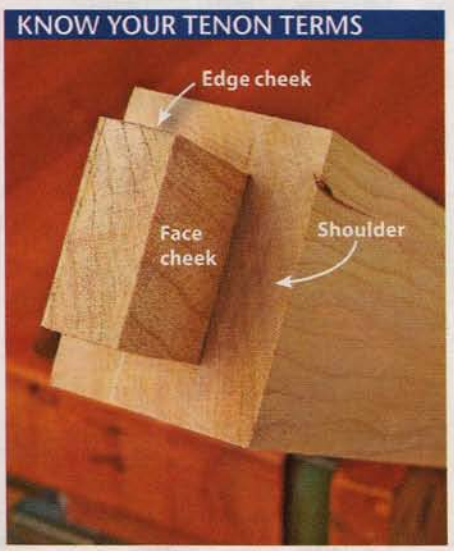
I have a dado set; why do I need a tenoning jig?

Using a dado set to cut tenons on a workpiece laid horizontally on the saw invariably leaves ridges and shallow grooves on the tenon cheeks that weaken the joint (unless you tediously sand or hand-plane them smooth). But a tablesaw tenoning jig secures the workpiece on its end to cut the cheeks with an ordinary saw blade, as shown *above*, leaving them jointer-smooth.

Looking at the Tenoning Jig Anatomy photo on the *next page*, you'll see that each jig has two main functional areas: the work-holding area (components labeled in gray), and a workpiece-positioning area (parts marked in black) that controls the size of the tenon.

To use the jig, clamp the workpiece with one face against the support plate and one edge against the fence. Set the blade height to cut the length of the tenon. Next, loosen both the sliding-base lock and the microadjust lock, and move the sliding base to correctly position one face-cheek cut. Engage the microadjust lock to dial in the cut precisely. Now, secure the sliding-base lock and make the cut by pushing the jig and workpiece through the blade. Repeat the process for the opposite face cheek and the two edge cheeks, as shown *above*. Make the shoulder cuts to remove the waste (using a miter gauge) either before or after you cut the cheeks.

The simple and repetitive process typically requires repositioning both the clamp and the sliding base when you switch from cutting face cheeks to cutting edge cheeks (unless your workpiece and tenons are square). So, let's start by rating the adjustments you'll make most frequently.

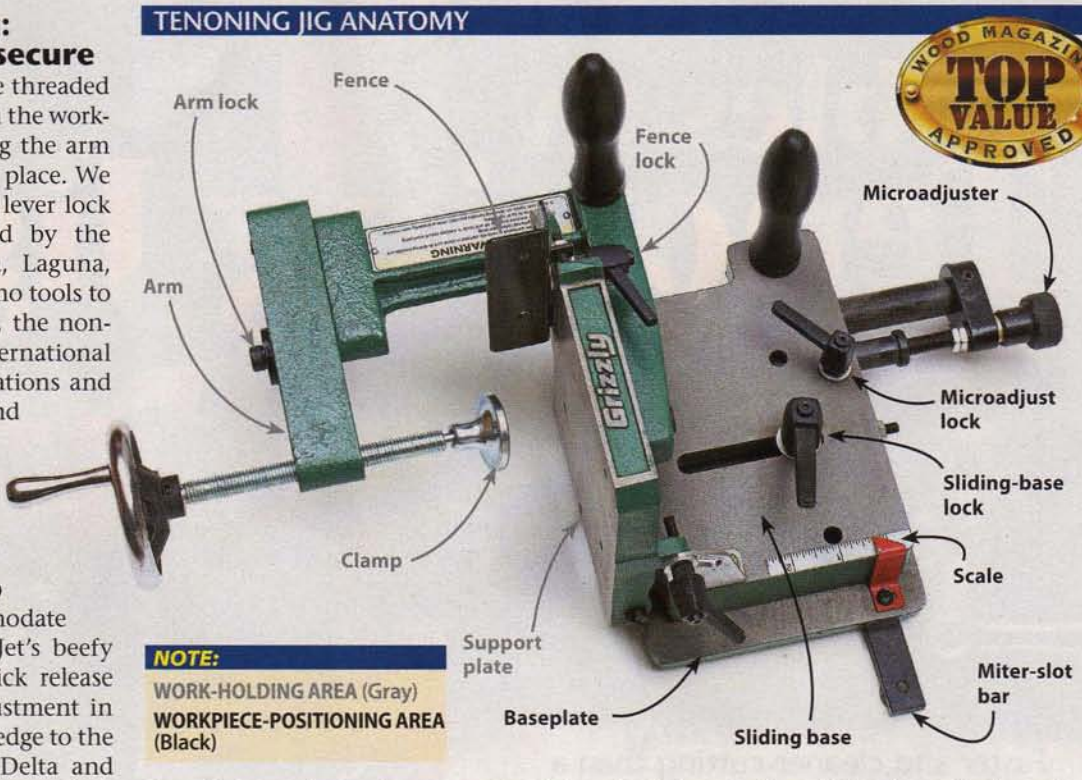


Workpiece clamping: Make it speedy and secure

Ideally, you want to center the threaded clamp rod—and the force—on the workpiece, so that means adjusting the arm fore and aft, and locking it in place. We like Jet's long, stout arm and lever lock best (shown *below*), followed by the knurled knobs on the Delta, Laguna, and Steel City, which require no tools to secure. At the other extreme, the non-sliding arm on the General International provides only two clamp locations and requires complete removal and reinstallation of the clamp. The rest of the models need a hexhead wrench (one more thing to keep track of) to operate the arm lock.

As for adjusting the clamp itself in and out to accommodate different workpiece widths, Jet's beefy Acme-threaded rod with quick release scored well for speed of adjustment in our tests. But we gave a slight edge to the speedy steel cranks on the Delta and General, because they turn smoothest and keep one hand free for holding the workpiece.

TENONING JIG ANATOMY



NOTE:
WORK-HOLDING AREA (Gray)
WORKPIECE-POSITIONING AREA (Black)

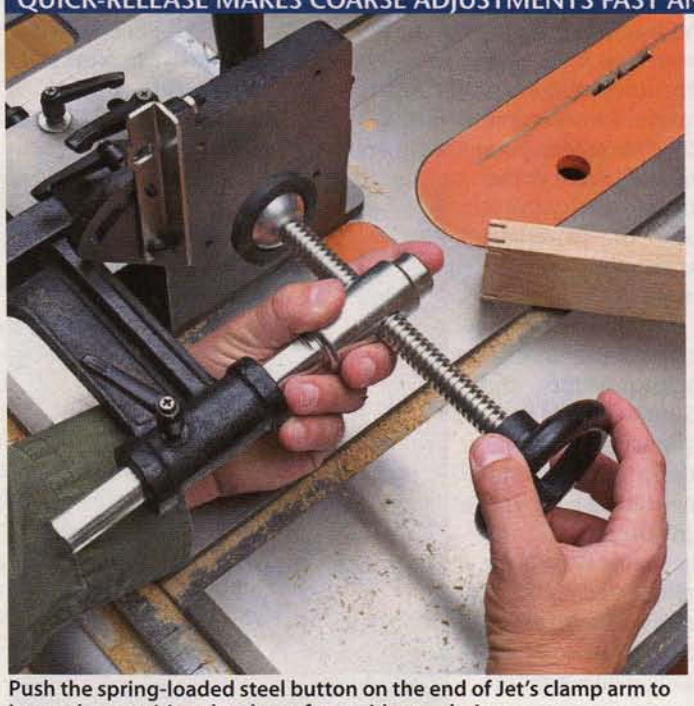
Lateral adjustments: Fine-tune your tenons

All but two of the tested tenoning jigs use sleeve-type microadjust systems for moving the sliding base left and right to adjust the tenon size: The microadjuster threads into a sleeve that moves freely in the sliding base when the microadjust lock is loosened. That's your coarse adjustment. Securing the lock fixes the sleeve in the sliding base so that turning the microadjuster moves the base in a slow but controlled fashion.

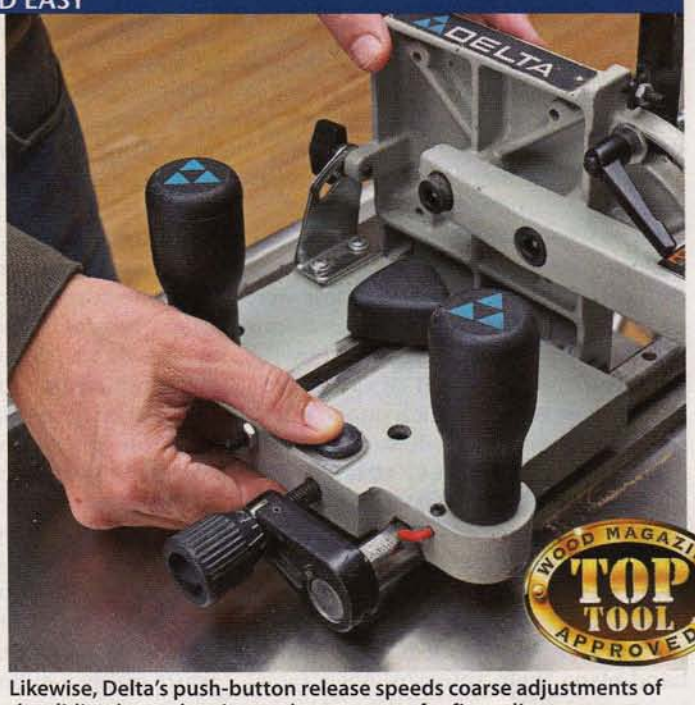
Overall, this style of lateral adjustment works fine, but requires locking and unlocking two closely spaced ratcheting lock levers (the sliding-base lock and microadjust lock).

So we prefer the more intuitive adjustments on the Delta (*below*) and Laguna jigs. Push and hold the quick release, slide the base, let go of the quick release, and dial in the precise alignment. One knob locks it down. Laguna's smaller locking knob and stiff travel knocked it down a couple of points from the Delta.

QUICK-RELEASE MAKES COARSE ADJUSTMENTS FAST AND EASY



Push the spring-loaded steel button on the end of Jet's clamp arm to instantly reposition the clamp for a wider workpiece.



Likewise, Delta's push-button release speeds coarse adjustments of the sliding base, then instantly reengages for fine adjustments.

Getting a grip: Handles = control

When pushing a workpiece through the blade, one vertical handle at both the front and rear of the jig gave us the best control, and the Delta, Jet, and Laguna jigs have handles in that orientation. Again, Laguna gets a slight downgrade because of its small handles.

Other features that affect performance

■ You may only have to make the critical jig-to-blade alignment when you first set up your jig, but we gave high marks to the General International (unfettered access to the two screws that secure the baseplate to the miter bar), and Delta and Steel City jigs (the sliding base must be in a certain position to access both screws). The rest require removing the sliding base from the baseplate, or, at worst, the entire jig from the tablesaw.

■ Steel City's oversize baseplate gives it a broad stance for stability, but also makes it significantly heavier than most jigs—1½ lbs heavier than the next-heaviest Jet, and a whopping 7 lbs heavier than the lightest-in-test Delta.

■ General International's jig is the only reversible jig that works equally well in the right miter slot and the left. But if your right miter slot measures more than 4¾" from the blade, the support plate can't get close enough to the blade to cut ¼" tenon shoulders without building out the support plate. You'll have to use it in your left miter slot instead.

■ The miter bars on most of the tested jigs have built-in adjustments to fit the bar to your saw's miter slot. On those without (see chart, *below*), you'll need to peen or file the bar to fit. (Learn how in issue 179, on p. 24, or in a free downloadable article at woodmagazine.com/mitergaugetuneup.)

The jig is up: Top tenoners

Delta's 34-184 stood tall above the rest of the jigs in this test with great features and precise performance, earning this $135 accessory our Top Tool award. Although Laguna's Platinum Series jig looks similar, it lacks the smooth operation and creature comforts of the Delta. Jet's JTG-10Q also scored well, sporting the best of the sleeve-type microadjusters, a rock-solid clamp, and a price tag the same as the Delta.

In the under-$100 price tier, the jigs are so similar in function and performance that we'd go with the bottom-dollar Grizzly, making it our Top Value.

Written by **Dave Campbell** with **Steve Feeney**

WHO CUT THE CHEEKS: 10 TABLESAW TENONING JIGS RATED

		WORKPIECE CLAMP					SLIDING BASE				PERFORMANCE GRADES (5)													FOR MORE INFORMATION:	
											PRIMARY			SECONDARY											
BRAND	MODEL	MAX. CLAMPING WIDTH (inches)	CLAMP FACE MATERIAL (1)	QUICK-RELEASE CLAMP? (Yes/No)	TOOLLESS ARM ADJUSTMENTS? (Yes/No)	MAX. WORK-SUPPORT TILT (degrees)	LOCK TYPE (2)	COARSE-ADJUSTMENT TYPE (3)	HANDLE MATERIAL (4)	MITER-BAR WIDTH-ADJUSTABLE? (Yes/No)	FINE WORKPIECE POSITIONING ADJUSTMENTS	HANDLE LOCATION	EASE OF CLAMPING WORKPIECE	COARSE WORKPIECE POSITION ADJUSTMENTS	EASE OF ADJUSTING CLAMP ARM	EASE OF SETTING SQUARE TO BLADE	FENCE QUALITY	WEIGHT (lbs)	COUNTRY OF ASSEMBLY (6)	SELLING PRICE (7)	PHONE	WEB
DELTA	34-184	3⅜	S	N	Y	20	K	P	P	Y	A	A	A	a	b	a-	a	16½	C	$135	800-223-7278	deltaportercable.com
EAGLE AMERICA	400-1048	3⅜	S	N	N	18	R	S	P	Y	B-	B	B	b+	b-	b	a	19½	T	100	800-872-2511	eagleamerica.com
GENERAL INTERNATIONAL	50-050	3	S	N	Y	39	R	S	P	N	B-	B	A	b+	c	a	b-	20	T	140	888-949-1161	general.ca
GRIZZLY	H7583	3¼	S	N	N	18	R	S	P	Y	B-	B	B	b	b-	b	a	18	C	60	800-523-4777	grizzly.com
JET	JTG-10Q	3⅛	R	Y	Y	25	R	S	P	N	B	A	A-	b	a	c	b-	22	C	135	800-274-6848	jettools.com
LAGUNA	Platinum Series	3⁹⁄₁₆	S	N	Y	18	K	P	S	Y	A-	B	B+	b+	b	b	a	19½	C	145	800-234-1976	lagunatools.com
ROCKLER	29840	3⅜	S	N	N	18	R	S	P	N	B	B	B	b	b-	c	b	19½	T	90	800-279-4441	rockler.com
SHOP FOX	D3246	3¼	S	N	N	18	R	S	P	Y	B-	B	B	b	b-	b	a	18	C	70	800-840-8420	shopfox.biz
STEEL CITY	35810	3⅞	R	Y	Y	18	R	S	S	Y	B-	B+	B-	b+	b	a-	a	23½	C	110	877-724-8665	steelcitytoolworks.com
WOODCRAFT	144755	3¼	S	N	N	18	R	S	P	Y	B-	B	B	b+	b-	b	a	18	C	90	800-225-1153	woodcraft.com

1. (R) Rubber-covered steel
   (S) Steel
2. (R) Ratcheting lever
   (K) Knob
3. (S) Sleeve
   (P) Push-button
4. (P) Plastic
   (S) Steel
5. A Excellent
   B Good
   C Fair
6. (C) China
   (T) Taiwan
7. Prices current at time of article production and do not include shipping, where applicable.

From Trash ...

Salvage your own hardwood lumber and save big bucks.

Where to find it:

Tune in your wood-seeking radar, and it's hard to *not* see salvageable lumber. However, be prepared to swallow some pride and roll up the shirtsleeves. You'll soon be asking favors of complete strangers, digging through some less-than-clean locations, and putting in lots of sweat-equity to reclaim that prize wood.

I brake for remodeling sites

Don't pass a remodel or demolition site like the one shown *below* without putting the car in reverse. In all likelihood, that material in the construction dumpster will go straight to the landfill unless you intervene. Seek out the head contractor or the property owner and politely request to take some of it off their hands. The older the building being remodeled or demolished, the better the chance for desirable old-growth timber with tight growth rings.

Great finds: Hardwood floors, wide trim, solid doors from residential sites; timber beams from commercial sites.

Steer clear of: Post-Depression-era homes. Standardized construction materials were great for the housing boom, not so much for hardwood projects.

Barnwood bonanza

Wooden barns are all the rage in the salvaged wood set. "But don't go hooking a chain to your truck hitch and pulling one down on your head," warns Jay Wikary, CEO of American Barn Company of Chicago. His company specializes in dismantling and salvaging barns and turning the wood into rustic architectural beams, flooring, and custom furniture. Jay says farmers have specific requirements when it comes to demolition. They need to avoid liabilities (meaning you better be insured and knowledgeable about dismantling barns). And they want the entire barn gone, not just partially stripped.

Great finds: Classic timber-frame construction, *below*, with long beams, straight grain, and high board-foot yields.

Steer clear of: Wood with signs of powder-post beetle or termite damage. Live insects could easily spread through your wood pile and your home.

Trade with the trades

A few minutes spent with the yellow pages could net you dozens of businesses that work in hardwoods. From cabinet

ONE MAN'S TRASH IS ANOTHER'S TREASURE

NEW LIFE FOR AN OLD BARN

Photo: American Barn Company

... To Treasure

shops to doormakers, from boat-builders to veneer manufacturers, any shop that cuts wood has offcuts left over. But don't go in empty-handed. Exchange sprinkled donuts and hot coffee for valuable hardwoods. You'll come out ahead in the bargain.

Great finds: Mahogany. Doors, boats, and high-end cabinets still regularly incorporate this sought-after wood.

Steer clear of: Efficient companies. Tiny offcuts will pile up in your scrap bin.

Don't discount the discards

Discarded furniture might be the most overlooked source for project wood. Just because it no longer looks like a board doesn't mean it won't have usable wood. Keep an eye out for garage-sale gems. When you see a going-out-of-business sale, skip the shoes and shirts and ask about salvaging the shelving. Even if you don't find any usable wood, you might come across cabinets or wall organizers for your shop. And if your city has a spring cleanup, hit the streets early—maybe even the preceding evening—for the big scores.

Great finds: Tabletops, headboards, broken pianos, and church pews, *below left*, are the board-foot jackpot.

Steer clear of: Veneered woods masquerading as solid stock.

The ever-present pallet

You'll find shipping pallets, *below right*, at almost any company with a loading dock. But be warned; they represent the most work for the yield with lots of nails to pull and grit to clean up. So be picky. Don't waste that kind of time and effort on common pine pallets. Look for hardwoods instead (after getting permission at the front office). The heaviest or most expensive items are generally shipped on oak pallets with thick pieces.

Great finds: Companies with oversized international shipments. What's cheap, available wood in one country is exotic in another.

Steer clear of: Pallets from pesticide, fertilizer, or other chemical companies. Those stains might be hazardous.

Miniaturize for marketing

Running low on wood? It's time to downsize. Raid the scrapbin and turn out some smaller projects. Not only do they make great gifts and beautiful display items, but they also invite questions from your curious friends. When you tell them about the project, make sure to include the story of where you got the wood. Then be prepared to jot down phone numbers as they tell you about the friend of a friend with a garage full of wood.

Great finds: Acquaintances with outbuildings and packrat tendencies.

Steer clear of: Becoming a packrat yourself. Set a minimum size limit for offcuts and rid your shop of anything smaller.

continued on page 74

DISCARDS DELIVER THE BOARD-FEET PAYOFF

A PALLET LOAD OF PROJECT POSSIBILITIES

How to work it:

Unless luck smiled on you, the wood you salvaged needs a little more work than lumberyard stock. Extra care is required to avoid blade-dulling metal fasteners and dirt. Simply focus on all the money you saved, and the time will fly by as you complete these easy steps.

1. Mind the metal

Public enemy number one to blades and bits: metal. Remove all obvious nails and screws from the board. For hidden fasteners, use some of that money you saved to invest in an inexpensive metal detector, such as this one from Zircon (m40, $40, 800-245-9265, zircon.com). Mark the hot spots with chalk and cut around them.

2. A clean board is a happy board

Dirt runs a close second to metal in the blade-dulling offender list. Scrub off any loose grit with a stiff plastic- or brass-bristle brush. Avoid steel bristles, which may re-introduce a problem metal.

3. Reveal the grain

The last step before blade touches wood: purge the last coat of dirt or any old, protective finish. This is no time for finesse. Get out the belt sander and clear it away quickly with an 80-grit belt. Keep the tool moving though. Belt sanders hog away material quickly and can gouge the surface in a heartbeat.

4. Lose the ends, save the blade

The porous end-grain of wood collects dirt like a celebrity tabloid. Boards piled in barns or dragged across the ground as pallets especially pack away the grit. Cutting off an inch or several from the ends of each board not only spares your cutters, it removes splits from old, checked boards.

5. Can we just machine it already?

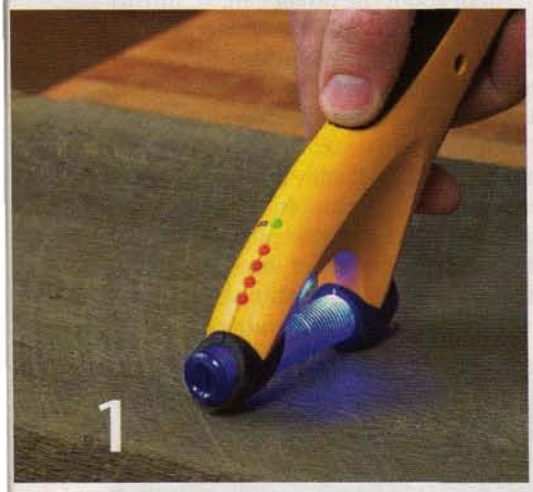
Yep. It's finally time to mill the wood into usable material. First take off that expensive, premium blade and pop in a cheap or old blade you don't mind dulling. Then start by straight-line ripping one edge with the tablesaw or a circular saw and straightedge. Flip the board and true up the opposite edge to parallel the first, removing just enough material to eliminate rot or stains. Give your jointer and planer the same old-blade downgrade before squaring and thicknessing the material.

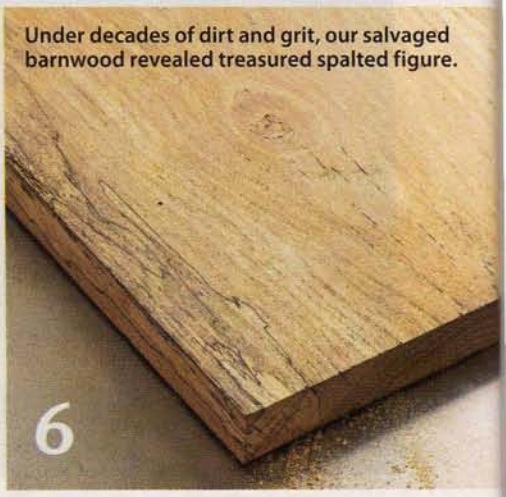
6. Celebrate the story

With any heirloom furniture, the provenance proves almost as important as the construction. Reclaimed lumber adds history on top of history. Celebrate that story by displaying it proudly in the wood. Rough edges, nail holes, worm tracks, and faded finishes can all become design elements in the final project.

For every barn Jay Wikary salvages, he records the history. "We jot down whatever we know about the barn. We put that together with a picture and we give that to everybody that gets one of our salvaged-wood products," he says.

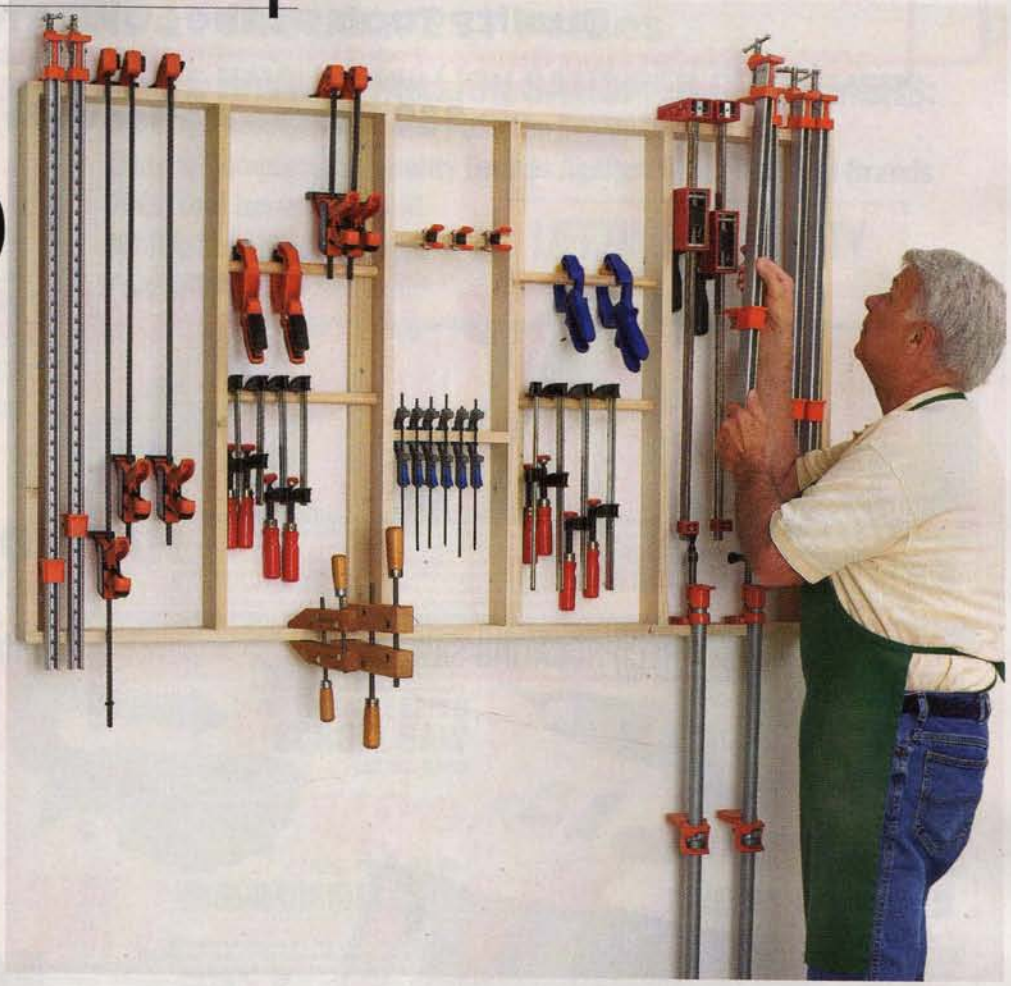
Written by **Lucas Peters**





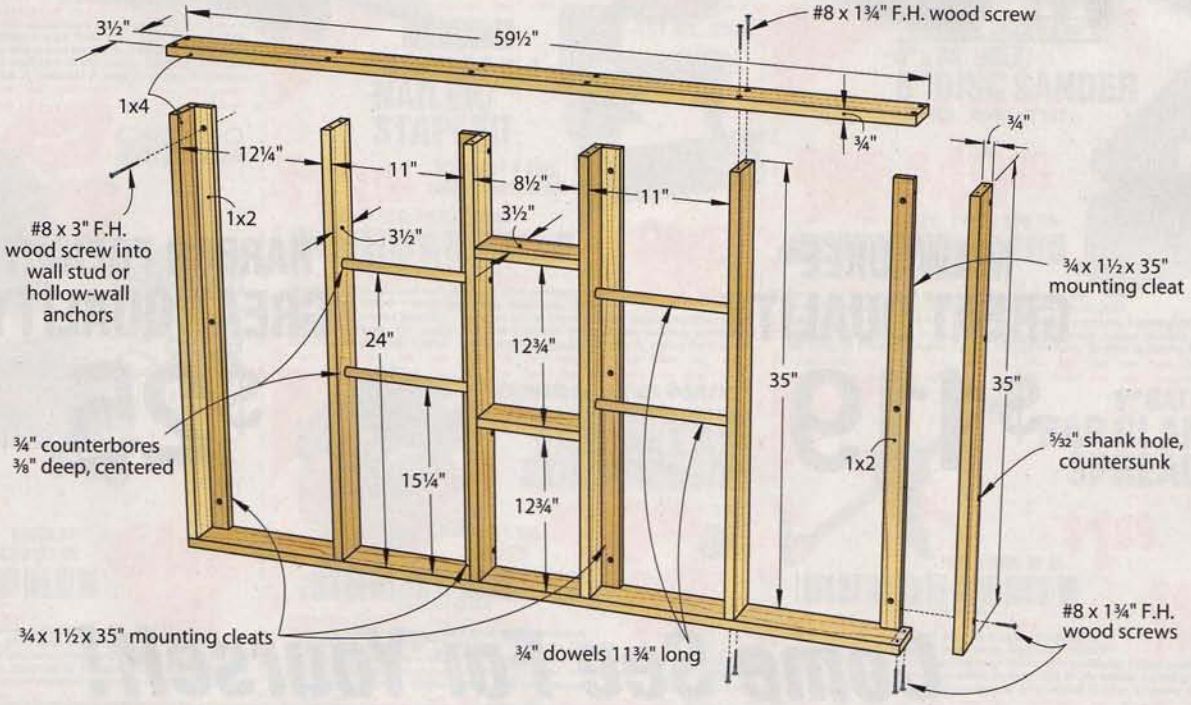
Under decades of dirt and grit, our salvaged barnwood revealed treasured spalted figure.

Space-Saving Clamp Rack



You can never have too many clamps, but organizing the countless shapes and sizes they come in can be a huge problem. Until now. Build the unit as shown, or customize it to fit your wall space. It's made of inexpensive 1×2 and 1×4 pine; numerous "shelves" support even large clamp collections. In addition to 1×4 shelves, it also has dowels for hanging spring clamps and other small C-clamps. To anchor the unit firmly to a wall, screw 1×2 cleats to the 1×4 uprights, and center the cleats over studs.

Project design: **Rod Cox, St. Paul, Iowa**



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Item 98199 shown

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LOT NO. 98199/90891/96697

$79.99

REGULAR PRICE $139.99

SAVE $60

30897805

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CENTRAL MACHINERY

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Item 93981 shown

LOT NO. 93981/97181

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LOT NO. 95275

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REG. PRICE $74.99

SAVE 46%

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SUPER COUPON!

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LOT NO. 45807

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REG. PRICE $6.99

SAVE 71%

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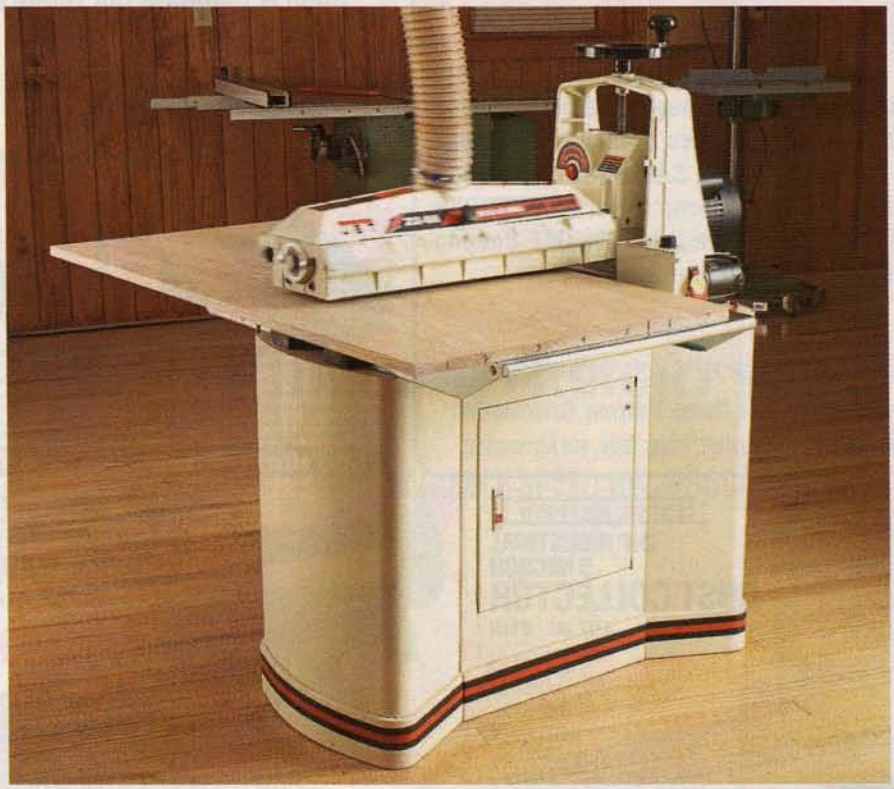
About our product tests

We test hundreds of tools and accessories, but only those that earn at least three stars for performance make the final cut and appear in this section. Prices are current at the time of article production and do not include shipping, where applicable.

Oscillating drum sander flattens us with its stellar showing



When I tested five drum sanders recently (issue 190, May 2009) I was pleasantly surprised at how uniformly thick and smooth I could get workpieces with them. A couple of months later I tested Jet's 22-44 Oscillating Drum Sander, and I'm stunned by how much quicker and smoother it gets the job done. You can use the machine in standard mode, or engage the oscillating feature and the drum glides back and forth 1" as it rotates. This side-to-side motion eliminates straight-line scratches—common with standard drum sanding—because it smooths in two dimensions simultaneously.

Regardless of what wood I ran through this machine, I got much smoother surfaces using the oscillating action than without; so smooth I only needed a quick 220-grit sanding with my random-orbit sander to finish the job. Occasionally, the 22-44 left squiggly "snake tracks"—curvy high and low spots—but a second pass at the same depth setting removed them and left the panel dead flat. And even when I sanded a 44"-wide panel, the thicknessing accuracy across the workpiece never differed more than .008"—more than acceptable.

This machine requires a significant investment, but the $600 premium (compared to Jet's standard 22-44) can be recouped in time saved by not needing to use a random-orbit sander for several grits of smoothing. You can also save about $100 by skipping the optional infeed and outfeed tables. I tested this machine with them and without and got equal results. Plus, the infeed table made it tougher to reach the drum to change sanding belts.

—Tested by Doug Hicks, a former shop teacher and woodworking magazine editor

22-44 Oscillating Drum Sander

Performance	★★★★★
Price	$2,000

Jet
888-804-7129; jettools.com

Lock those chair joints with Tenon-Lok

Chair joints endure more stress than any other joint, often to the point of coming apart. Rockler's Tenon-Lok solves that problem by creating incredibly strong and durable self-locking blind-wedge mortise-and-tenon joints. The system has two parts: one for machining, and the other for assembly. To make the joint, begin by crafting your legs, stretchers, and rails as you normally would, including tenons. Bore matching mortises. Next, use the spring-loaded Tenon-Lok bit to bore out a cone shape inside the mortise.

To assemble the joint, tap a Tenon-Lok metal ring—ground sharp on one end—to the end of a tenon using the provided bushing to center it. Remove the bushing, apply glue to the joint, insert the tenon, and then drive it home with a mallet or clamp. As the joint closes, the force drives the ring into the tenon, spreading it snugly against the cone-shaped mortise walls, effectively locking the joint.

Rockler sells the bits in four diameters: ½, ⅝, ¾, and 1". Insert rings sell in packs of 12 for $5 to $8.

—Tested by Matt Seiler, a custom-furnituremaker

Tenon-Lok joinery system

Performance	★★★★★
Price	$19–21

Rockler
800-279-4441; rockler.com

continued on page 80

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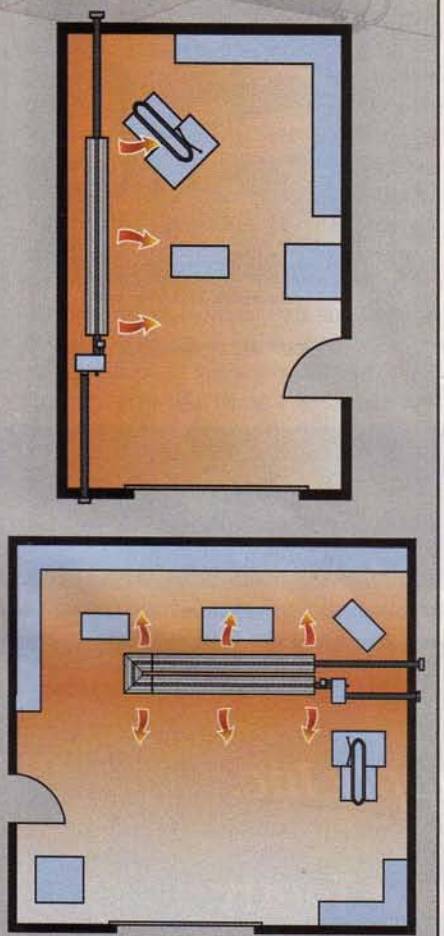

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Shop-Proven Products

Sanding tight into corners? No problem with Micro Zip

I was skeptical at first of the Gator Micro Zip Sander, because I figured I could always make a specialty sanding block from scrapwood. But its soft-foam handle and body provide just the right combination of flexibility and rigidity, making it comfortable to hold and maneuver while keeping the sanding surface flat. Its small 1×3" pad reaches into tight corners, and the hook-and-loop sandpaper proved easy to change. I was able to sand up next to a finished vertical surface without marring it.

Micro Zip does not offer refill sanding strips, but another kit (with 10 strips each of 80, 120, 220 grit) costs just $10. Or you can buy hook-and-loop sheets from woodworking retailers and cut your own to fit.

—Tested by Craig Ruegsegger, Multimedia Editor

Gator Micro Zip Sander

Performance	★★★★☆
Price	$10

Ali Industries
800-255-4748; zipsander.com

Digital mitersaws deliver accuracy to .1°

I demand accuracy and dependability from my mitersaw every day or it's off the jobsite. So I'm comfortable saying Milwaukee's 12" dual-bevel mitersaws are the best I've ever used. Their digital read-out miter scales, displayed to .1°, proved dead-on accurate. That kind of repeatability is especially important when several people use the saws and change settings; it's easy to return to a setup and know it will be accurate. The microadjuster with detent override lets you zero in on uncommon miter angles. And the miter tables glide on needle bearings so smoothly I forget I'm using a mitersaw.

I'm not one for gimmicks (such as lasers), but I really like the twin lights mounted on each side of the blade because they illuminate the cut area without glare or shadow. Both saws have beefy 15-amp gear-driven motors with soft-start that are strong enough to blast through tough 4×4 ipe without a hiccup. I could crosscut up to 7⅞" with the standard compound model, and with the slider I cut stock up to 13½" wide. Still, the slider weighs 65 lbs, 10 more than the compound, so be prepared if you plan to lug it around.

—Tested by Dave Fish, pro trim carpenter and cabinetmaker

12" Dual-Bevel mitersaws

Performance		★★★★★
Price	#6950-20	$525
	#6955-20 (slider)	$700

Milwaukee
800-729-3878; milwaukeetool.com

continued on page 82

FREE SHIPPING**

You'd pay hundreds more if you purchased these router bits separately!

A dream buy for wood workers... 35 high-quality router bits for just $1.14 each! This incredible set has a huge assortment of bits that let you V-groove, flush trim, chamfer, dovetail and much more with professional results every time. Bits have 1/4" shank and are solid carbide or carbide tipped for years of dependable use and clean cuts with a working error of less than 0.2 mm. Bits come in a wooden storage case with labels to keep them clean and organized.

Compare At: $310.09
YOUR PRICE
Item No. UB61-56652
$39.99 FREE Ship $7.50
EXTREMELY LIMITED QUANTITIES

16 PIECE SET

Bore clean, deep holes in soft or hard wood with virtually no effort!

For running electrical wires through floor joists, assembling 2x4 wood playsets for the kids and other tasks, these auger bits make the job a snap! Put some excitement into your next "boring" job with this tradesman's quality 16-pc. set. Each bit is forged from #45 carbon steel and has a heat-treated to HRC47 hardness tip, flutes ground behind the lands to pull chips up for fast, clean cutting and a polished finish. Includes 3/8", 1/2", 5/8", 3/4", 7/8" and 1" bits in both 4-3/4" and 8" lengths and 1/2", 5/8" and 3/4" bits in 16" length. Bits come in protective case.

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Compare At: $154.99
YOUR PRICE
No. UB61-56447
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Tornado Tools™ 21.6V cordless drill — more features, more power & still the choice of contractors & tradesmen nationwide!

- 21.6V Power
- Variable speed (0-650 RPM)
- 3/8" Jacob's keyless chuck — no key to lose
- 16 screwdriver settings
- Includes 6 drill bits, 4 Phillips, 2" extension, 2 double-ended and 2 straight screwdriver bits

Now is the time to replace your under-powered drill with this contractor-grade drill! It has a high-torque 21.6V motor that drills into wood, metal & masonry with astounding speed & ease. Plus, it has a variable speed up to 650 RPM & 16+ screwdriver settings. And thanks to a 3/8" Jacobs keyless chuck, you can change bits in seconds - no key to fumble with or lose! Drill has on-board bit holder & comes with 15-pc. accessory set including: 6 drill bits, 2" extension bar, 2 double-ended screwdriver bits, 4 Phillips screwdriver bits & 2 straight screwdriver bits. Molded carrying case & AC adapter/charger incl. Extra batteries & charger available, ask operator for details.

*Price reflects $10.00 mail-in rebate. Price before rebate is $49.99. Rebate expires 9/30/09.

Compare At: $249.95
YOUR PRICE
Item No. UB61-56384
SPECIAL BUY LIMITED QUANTITIES
$39.99* FREE Ship $7.50

At last! A chain saw that requires no costly gas or cumbersome electric cords!

TORNADO TOOLS BY KINETIC RESEARCH

Tornado Tools™ 18V cordless chain saw offers unparalleled convenience without compromising performance! Need to clean up branches after a thunderstorm, trim a tree or cut some firewood while camping? This cordless chain saw will get the job done quickly and safely. Its 18V motor and rechargeable NiCad battery power the chain at 576 FPM to zip through branches with amazing ease. Also has double safety switch to help prevent accidents, safety nose guard design for anti-kick back and a lightweight outdoor tough design that weighs just 9 lbs. Battery charger included. Additional batteries available. Ask your operator for details. 23-1/2" x 6-1/2" x 6-3/4".

Ideal for ...
- ✓ After storm cleanups
- ✓ Pruning trees & shrubs
- ✓ Camping
- ✓ Spring yard cleanups
- ✓ More!

Compare At: $269.99
YOUR PRICE
No. UB61-51958
$79.99 Ship $3.95 ~~$7.95~~

The next energy crisis could strike at any time! Will you be ready?

Price breakthrough! This 1000W generator is priced under 130* - that's $579 less than competing models! When the power goes out or you're camping miles away from the nearest outlet, this generator delivers the juice you need. The 2HP air cooled two-stroke engine & brushless generator deliver the power you need to run lights, power tools, electric appliances & more. Features a 120V AC outlet with circuit breaker, 12V DC outlet, a DC trickle charger for charging your car battery & eight hours of run time per tank of gas at half load. Also has a hushed design for reduced noise. 15" x 13" x 14". Not available in CA. Outdoor use only (see manual).

1000 WATTS

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WAS: ~~$299.99~~
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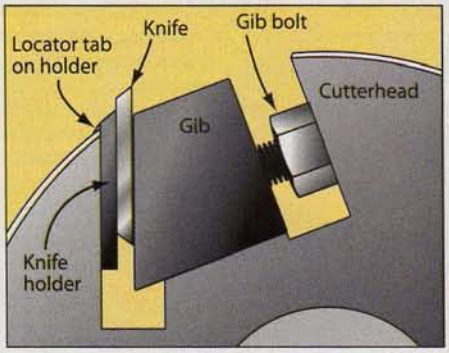
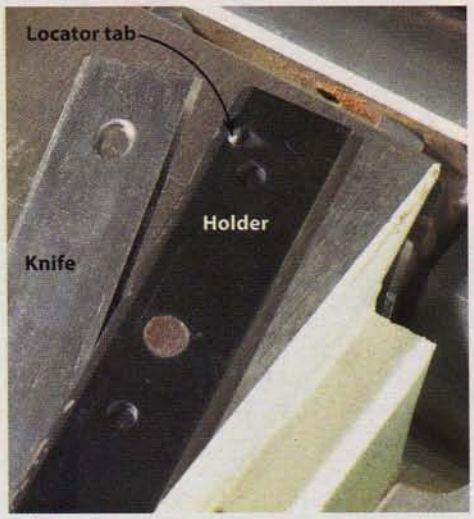
Quick-set jointer knives get you back in business

For many years, Dispozablade has brought the convenience of disposable, self-indexing knives (like those on most benchtop planers) to jointers. Now, Dispozablade's Self-Set system makes installing the knives foolproof. With a start-up kit you get three knives and three holders, with locating tabs for positioning on the cutterhead. After removing your old knives and jack screws—you won't need them anymore—mount a knife onto a holder, and place it in the cutterhead slot, with the tabs resting on the cutterhead, as shown at *right*. Tighten the gib bolts to secure the knives and holders. That's it. No knife-setting jig, no jacking around with jack screws.

If you nick the knives, simply loosen the gib bolts and shift one knife to offset the nicks. Because the knives have dual cutting edges, you can flip them when they become dull. (As with disposable planer knives, we don't recommend resharpening them because it's difficult to achieve identical grindings.) High-speed-steel replacement knives cost from $25 to $70 for a set of three. Dispozablade also sells cobalt knives in three-packs ($49 for 6", $63 for 8"). They are similar to carbide, meaning they maintain sharp edges longer but prove more brittle. Self-Set knives do not fit all jointers and planers, as we found on those with cutterheads that have rounded edges where the tabs rest. Call Dispozablade to see whether Self-Set knives will work on your machine. (They prefer to talk with customers rather than listing all tool matches on their Web site.)





Self-Set disposable jointer knives

Performance ★★★★☆

Price 6" startup kit, $223; 8" startup kit, $255

Dispozablade

800-557-8092; dispozablade.com

—Tested by Bob Hunter, Tools and Techniques Editor

A router table that thinks it's a shaper

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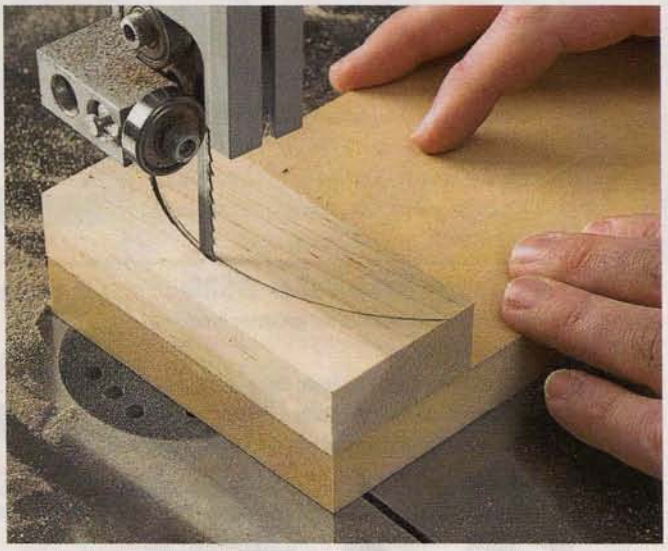
Bandsaw small project parts, preserve small body parts



Q: My jewelry box plans require me to bandsaw some small parts that would bring my fingertips close to the blade. Is there a safe way to bandsaw small parts?

—Shirley Anderson, Rockford, Ill.

A: Double-face-tape the blank for your curved part to a larger scrap of plywood or MDF, Shirley. Then hold the scrapwood guide as you bandsaw the curved piece to shape, as shown. This keeps your fingers safely away from the blade and gives you much more control over the workpiece as you guide it through the blade.

When a hole is not a hole

Q: I need to drill a hole about 12" long to route a cord through a lamp base. Is there a way to drill a hole that deep and stay true?

—Michael Kelly, Summit, N.J.

A: The best way to drill a deep hole, Michael, is to forget about the drill. Turn instead to your tablesaw or router table.

If you're cutting the lamp base from solid stock, cut your base blank to its final dimension, plus about 3/16" extra width to account for your blade's kerf. Joint or sand it to clean up the faces. Then rip the base in half at your tablesaw. (Be sure to use multiple passes with successively higher blade heights for stock thicker than 1" or so.) Otherwise, if you're laminating a blank from multiple layers, build up two half-thicknesses, but don't glue the two halves together, yet. Use a dado blade to cut a centered groove in the inside faces of the lamp base halves, as shown.

Alternatively, if you absolutely need a round hole, you can use a core box bit at your router table. Then simply glue and clamp the two halves together.

Never too late to learn about latewood

Q: I overheard my hardwood dealer speaking to a customer about "latewood." I didn't want to interrupt their conversation, but I'm unfamiliar with the term. What is latewood?

—Ron Altier, West Lafayette, Ohio

A: Ron, the terms latewood and earlywood refer to the different densities of wood produced in a tree in the course of a year's growth. Early in the growing season, in the wet spring, a tree grows rapidly, producing large-vessel cells. As water becomes more scarce later in the season, the tree's growth slows, producing smaller cells. Year after year, this pattern creates the tree's growth rings, the earlywood generally showing up as the more porous, lightly colored wood, and the latewood as the darker, tighter-grained wood.

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18 Ga Brads available sizes 5/8", 3/4", 1", 1 1/4", 1 1/2", 1 3/4", 2"

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110 VOLT PORTABLES (Thermostat included.)	S&H	Discount Price	Qty.
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3' 750 w – Silicone	$18	$179	
Heavy-Duty 240v	$25	$329	
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Ask WOOD

Back-and-forth bandsaw blade blues

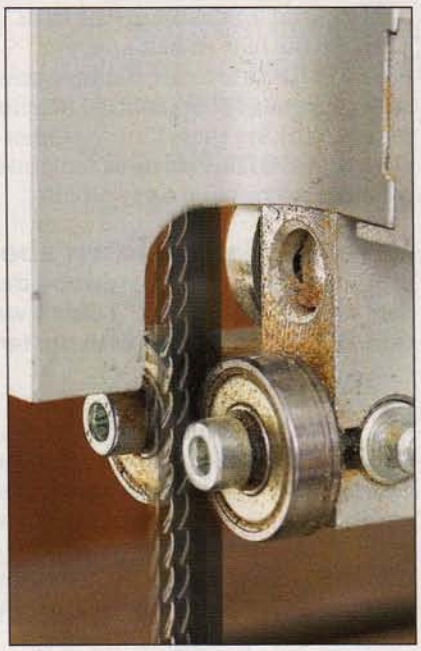
Q: I loved your online video about how to tune up a bandsaw (woodmagazine.com/bandsawtuneup). I followed all of your steps to the letter. However, my bandsaw blade has a back-and-forth motion. What's causing this and how do I correct it?

—James Mulholland, Romulus, Mich.

A: If the blade was welded even slightly out of square, it would show up as the back-and-forth motion that you describe, James. Remove the blade and replace it with another. If the problem goes away, call the blade manufacturer or the retailer where you purchased the defective blade, and ask for a replacement.

If the problem persists, check the tires on the wheels. The blade on a saw left idle for long periods of time can leave an impression in the rubber tire which might cause erratic tracking. Purchase and install aftermarket replacement tires. (Enter "bandsaw tire" in the search box at woodcraft.com.)

If you still see a back-and-forth motion, the culprit is probably the wheel itself. A bad bearing or a bent shaft warrant a call to the manufacturer who can direct you to the nearest service center.



Forrest Blades

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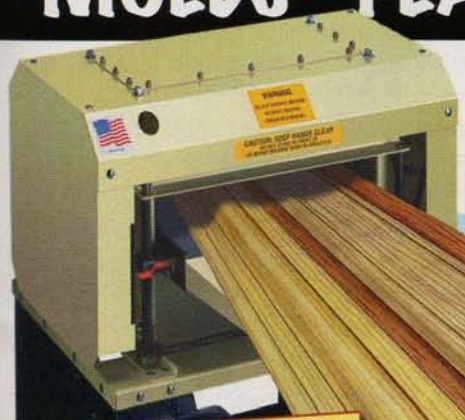

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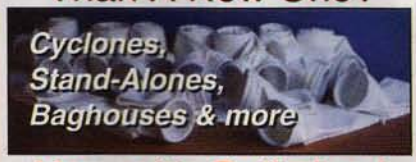

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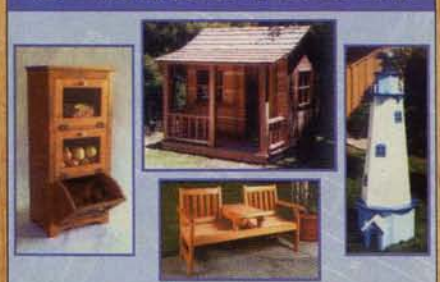

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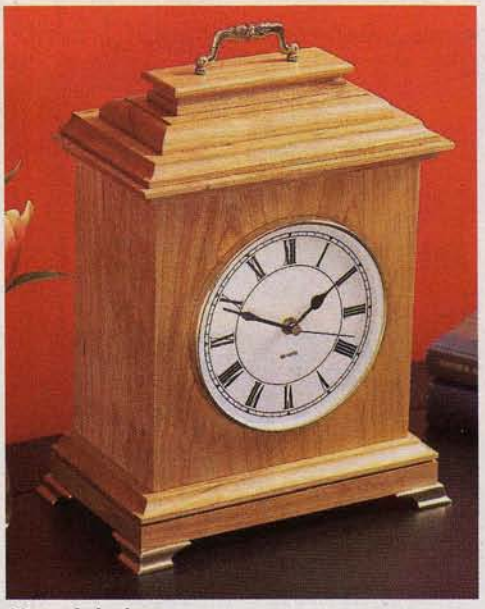

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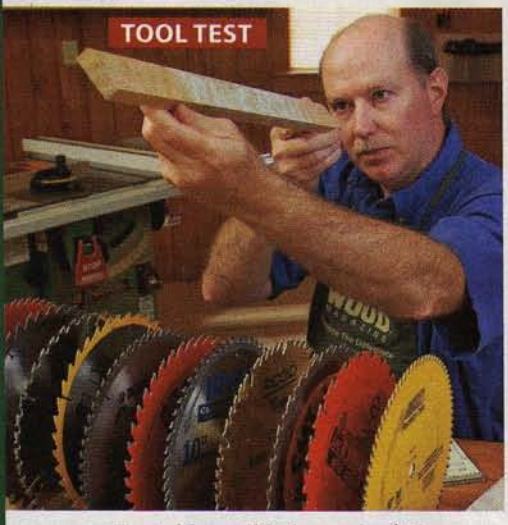
Create this heirloom-quality timepiece in just a weekend. You'll need only common router bits to make the detailed and handsome stacked-molding top.

Construction-grade excavator
Dig this! Extend the boom arm to scoop items into the pint-size bucket, then pivot the body to dump the load. A ton of fun for budding contractors (and for you!).



Top tablesaw blades under $50
We tested dozens of rip, crosscut, and multi-purpose blades, and found several great bargains that make clean, accurate cuts.

Our best router bit setup tips
Reduce your setup times, increase your accuracy, and boost your overall results with four pages of helpful hints for both handheld and table routing.

Takes-a-beating, budget-friendly workbench
Build this simple bench in a weekend using economical plywood, 2×4s, and other dimensional lumber. Then wheel it to wherever you need a sturdy work surface.

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